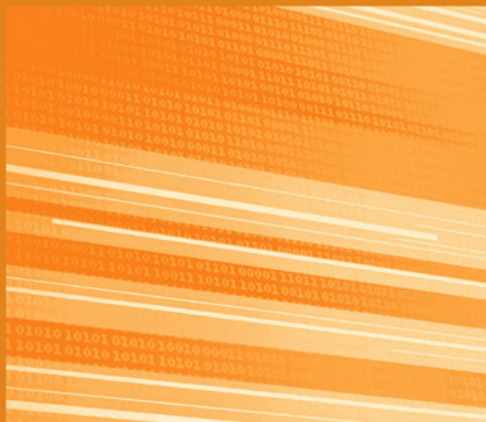
The Indian Economy Sixty Years After Independence



Edited by

Raghbendra Jha



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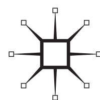
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Preface

2007 marked 60 years of Indian independence, a period in which a country that is home to a sixth of the world's population, has gone through immense transformation. The persistent image of India as a nation unable even to feed its population has been replaced with that of a country that is being called an innovation powerhouse, a knowledge economy at the forefront of key scientific research, indeed a country where the interface between research and innovation is being re-defined.

However, this sanguine outlook is only of recent origin. To be sure the Nobel Laureate poet Rabindranath Tagore moved by India's colonial experience wrote of India a few years before independence (in 1941) that '… perhaps in no other modern state was there such hopeless dearth of the most elementary needs of existence.' The implications of this dire economic condition were compounded, in the eyes of many observers, by the granting by the Indian constitution, almost immediately after independence, of universal adult franchise within a democratic parliamentary set-up. This was at a time when some of the major Western powers had not granted full voting rights to all their population. It was widely felt in the 1950s and 1960s (and perhaps even later) that such an audacious experiment was a recipe for disaster.

Yet India has proved these commentators wrong. From some of these same quarters one hears comments like the 21st century is India's century. Although there is much that is remarkable in India's emergence on the world stage as a major economic power several challenges remain, some like poverty have been persistent while the growth process itself has thrown up new challenges, like addressing increasing regional inequality, or designing purposeful economic policy in an era of coalition governments.

The present volume does not portend to be a comprehensive analysis of the Indian economy sixty years after independence. Indeed it would be overly ambitious to attempt such a task. Rather, this book is an attempt to examine key areas of the Indian economic experience closely with the subsidiary aim of being able to anticipate future developments.

The papers in this volume were presented at a conference to mark 60 years of Indian independence in August 2007 by Australia South Asia Research Centre, Australian National University. I am grateful to all the scholars who presented papers at the conference and then undertook the non-trivial task of transforming conference presentations into major scholarly articles. At Palgrave Macmillan Taiba Batool and Alec Dubber were most gracious and helpful during the preparation of the manuscript for publication. ASARC administrator, Stephanie Hancock, organised every detail of this conference and prepared the manuscript for final publication. I really cannot thank Stephanie enough for her many contributions to the conference and this volume.

Mark Twain once famously said that 'India is, the cradle of the human race, the birthplace of human speech, the mother of history, the grandmother of legend, and the great grand mother of tradition. Our most valuable and most instructive materials in the

history of man are treasured up in India only.’ This country of traditions now has a population of 1.1 billion with a median age of 24.9 years! Hence there is much that is exciting and vibrant that is unfolding. This book tries to capture some of the economic dimensions of India’s transformation.

Raghbendra Jha
Canberra, February 2008

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1
An Introduction to the Volume

Raghbendra Jha

The rapid growth of the Indian economy and the impressive structural transformation that has accompanied it are phenomena of monumental importance to our times. Indian economic reforms which had tentative and hesitant beginnings in the mid 1980s accelerated in the early 1990s and have never looked back. The fruits of such reforms are now evident in the distinctly higher trend rate of growth of the economy, the wide base and stability of such growth and the immensely large canvas of opportunities manifested, among other things by an increasing readiness to both cooperate and compete with the external world, now open to India's young population.

The completion of 60 years of Indian independence in August 2007 provided an important benchmark for taking stock of India's economic performance and assessing the possibilities for the future. For a nation of 1.1 billion with a median age of 24.9 years assessing prospects for the future is at least as important as taking stock of where this population stands.

Against this background the Australia South Asia Research Centre (ASARC) at the Australian National University organised a two day international conference of leading scholars — economists, political scientists and public policy experts — on the Indian economy sixty years after independence. The unifying theme behind the conference was twofold: an evaluation of the extant situation and an assessment of prospects.

The present volume contains a selection of 16 papers that were presented at the conference and represent a broad view of the potential for and the problems facing the Indian economy. It is divided into five parts (i) Mega Trends in India — Economics and Politics, (ii) Emerging Issues in Fiscal Policy in India, (iii) India's External Sector, (iv) Trends and Prospects for India's Social Sector, and (v) Sectoral Issues.

In part 1 Robin Jeffrey in his chapter entitled 'Coalitions and Consequences: Learnership and Leadership in India, 1948–2008' explores a missing aspect of the large literature that has grown up around coalition governments in India. The missing aspect is the 'educational process' by which Indian politicians have learned the benefits and requirements of coalition governments and then how to make them work. The chapter then discusses whether coalition governments are good or bad for economic development and social change. Raghbendra Jha in his chapter entitled 'The Indian Economy: Current Performance and Short-run Prospects' documents the broad contours of economic growth in independent India. It focuses particularly on the increase in resources available (in the forms of higher saving and investment and lower fiscal deficit) for higher economic growth and the recent surge in the external engagement of the Indian economy. Anomalies in the growth process are pointed out as are some emerging constraints to accelerated growth. The chapter concludes by examining the short-run prospects for economic growth in India.

In part 2 Stephen Howes, Deepak Mishra and V.J. Ravishankar examine the experience of the World Bank's lending to Indian states in their chapter entitled 'A Decade of World

Bank Sub-National Lending to India: A Retrospective'. This has been an important recent development in the past decade as previous World Bank loans were all routed through the central government. This transition has lead to some important successes and failures. This chapter analyses the causal factors behind such successes and failures and draws important policy conclusions for the future. In his chapter 'Pension Reforms in India' Mukul Asher analyses the important issue of the pension and social security reform in India, an issue of importance since a larger number of Indians are expected to live longer lives. He provides a comprehensive view of the existing social security system, analyses its shortcomings and advances suggestions for policy reforms.

In part 3 Prema Chandra Athukorala in his chapter entitled 'Export Performance in the Reform Era: Has India Regained the Lost Ground' argues that the inward orientation of economic policy during the pre-reform period led to a substantial reduction in India's potential share of world trade. He then examines the key issue of whether the outward orientation since the 1991 reforms have led to a recovery of lost ground. In his chapter 'Manufacturing Protection in India since Independence' Garry Pursell, Nalin Kishor and Kanupriya Gupta carefully document India's protection in regard to the manufacturing sector and identify, in particular, the political economy factors that have led to recent reductions in protection and consider the outlook for extending these reforms in the future. In their chapter 'Free Trade Arrangement between India and Japan: An Exploratory Analysis' K. Kalirajan and Swapan Bhattacharya argue that the Indian and Japanese economies have increasingly been coming closer. Although both countries favour multilateral trade reforms the rapid proliferation of Free Trade Agreements (FTA) has led the two countries to consider the possibility of entering into one. This chapter examines the benefits and costs to the two economies of entering into a FTA.

In part 4 Anil Deolalikar in his chapter 'Human Development in India: Past Trends and Future Challenges' evaluates India's performance on five dimensions of human development — infant mortality, child nutrition, nutrient intake, educational attainment, and sex ratios — especially during the decade of the 1990s. He also examines the challenges that remain going forward. In their chapter 'Microfinance, Self-Help Groups and Empowerment in Maharashtra' Raghav Gaiha and Mani Nandhi assess the benefits of microfinance through self-help groups, based on a specially designed survey in selected villages in Pune district in Maharashtra, India. While the benefits in terms of higher income, consumption, and savings matter for the poor, the focus here is broader, as an attempt is made to also assess some key dimensions of women's empowerment — defined broadly as expansion of freedom of choice — and action to shape their own lives. In his chapter 'Urban Vulnerability Reduction: Regulations and Beyond' V. Thiruppugazh examines the causes of urban earthquake vulnerability in Gujarat, India, based on a case study of Ahmedabad city which was severely affected in the 2001 Gujarat earthquake. This chapter argues that the non-compliance of regulations which causes urban vulnerability cannot be corrected merely by additional regulations or increased enforcement. An enabling environment of compliance of regulations can be achieved only though good enforcement mechanism, integration of development with vulnerability reduction, good governance practices, awareness creation, partnerships and capacity building.

In part 5 Garry Pursell and Peter Warr in their chapter 'Agricultural Trade Policies and Rural Poverty: Where is India Heading?' argue that as a policy solution to the problem of rural poverty, agricultural protection does not work. They place the issues of rural poverty and agricultural protectionism in Asia into a longer term context and make several policy conclusions with regard to the role of agricultural trade policy in rural poverty reduction. Raghbendra Jha, K.V. Bhanu Murthy and Anurag Sharma in their

chapter 'Market Integration in Wholesale Rice Markets in India' show that there is remarkable absence of integration across wholesale rice markets in India. Hence a policy to reduce barriers to internal trade is likely to yield rich dividends both in terms of improving the efficiency of agricultural markets and reducing the risk of creating isolated pockets of food insecurity. Raghav Gaiha and Ganesh Thapa in their chapter 'Supermarkets, Smallholders and Livelihoods Prospects in Selected Asian Countries' argue that whereas the emergence of supermarkets has transformed agri-food markets, but at different rates and to a different extent across regions and countries (including India) such transformation is a challenge for smallholders. While the risk of their exclusion is real, it is argued that there are opportunities as well. Indeed, contrary to assertions, the demise of smallholders as a consequence of the growth of supermarkets and dramatic changes in the food supply chain is neither likely nor unavoidable. Rakesh Ahuja in his chapter 'India's Great Vulnerability: Energy Insecurity' argues that next to water shortage energy insecurity is India's greatest economic vulnerability. He outlines different energy options for India and evaluates the prospects for energy security in the country. In their chapter 'Economic Determinants of Newsprint Consumption in India: A Time Series Analysis' Raghbendra Jha and U.N. Bhati examine the prospects for one of India's most dynamic industries — newsprint. With the rapid growth of print media outlets in India the demand for newsprint has also grown very rapidly. The chapter forecasts future trends in such demand. The volume ends with an index.

The volume thus contains essays on key aspects of the Indian economy, sixty years after the country's independence. The outlook for the Indian economy is at once promising as well as challenging. The new-found dynamism in key sectors of the economy sounds a sanguine note for India to not just excel but also to take a leadership role. However, the economy is also saddled with significant human resource issues. The skills of Indians and their institutions will be tested by these conflicting pressures. Although the future steady state of the economy is not fully predictable at the moment, there are enough signs to indicate that India, having endured severe crises in the past, will emerge an even more significant player on the global stage.

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PART I

MEGA TRENDS IN INDIA — ECONOMICS AND POLITICS

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2

Coalitions and Consequences: Learnership and Leadership in India, 1948–2008

Robin Jeffrey

This essay attempts to explore a missing aspect of the large literature that has grown up around coalition governments in India and then to include that aspect in a discussion of the consequences of coalition governments. Are they good or bad for economic development, social change and honest, effective government? Do they work better at the state level rather than the national?

The missing aspect is the 'educational process' by which Indian politicians have learned the benefits and requirements of coalition governments and then how to make them work. I argue that such a process began in the state of Kerala, took nearly a generation to 'learn' and partly depended on the availability (and talents) of individual leaders. The same educational process that fostered understanding of the rewards that coalitions can bring also sensitised politicians to the need to deliver goods to their constituents. This need to satisfy voters leads to consideration of questions about the 'goodness' or 'badness' of coalitions.

In arguing that the educational process has been overlooked in study of coalitions in India, I am not discounting other aspects. I would particularly acknowledge the fragmentation of Indian politics as sub-regions and previously marginal and illiterate groups have produced people who understand the political system and are able to work effectively within it. Potent local political parties emerge and it becomes difficult to create a powerful state-wide party, much less a powerful national party.

2.1 Coalitions in Kerala: Learnership and Leadership

Although the state of Kerala accounts for less than three per cent of India's population (about 32 million out of 1100 million), it has acquired notoriety for its 'model' of economic development and for its election of a Communist government in 1957. Kerala also 'learned' coalitions before the rest of India.

Kerala had to. The composition of the state and its social structure were in some ways a microcosm of India. To begin with, Kerala state of the Indian Union was created only in 1956 by the joining of two old princely states (Travancore, the large southern half, and pint-sized Cochin in the middle) and the British-ruled district of Malabar in the north. In each of the old units, sentiments and interests made people conscious of 'their' particular place, however much the Malayalam language and an overarching Malayali culture may have made a united Kerala seem a good idea.

Kerala was also socially segmented, highly literate and widely mobilised, even at independence. The population was roughly 20 per cent Muslim, 20 per cent Christian, 20 per cent high-caste Hindu and 40 per cent lower-caste Hindu. But Muslims were concentrated in Malabar district; Christians of various sects in Cochin and central and north Travancore. Churches, education societies and social organisations tended to work most effectively within the administrative unit where they originated.

The most notable exception to the latter statement was the Communist Party of India (CPI). Often banned from the 1930s to the 1950s, the CPI used different jurisdictions to enable members to slip between the butter-fingers of different police forces and continue their agitations. Sympathisers of the Indian National Congress (INC) were present in all three units, but they had few of the links or reasons for cooperation that the Communists had.

The three-dimensional patchwork of Kerala — jurisdictions, social groups and political and social organisations — looked in some ways like India in miniature. But high levels of literacy and social upheaval (the result, in part, of the collapse of the matrilineal family system that affected a large proportion of Hindus) accelerated participation in politics. First, the national movement against princely rule (or the British) drew people into action and organisation. After 1947, the struggle between Communists and the Congress brought political activity to every village.

Travancore held the first universal-suffrage elections in India in February 1948. The Travancore State Congress, loosely affiliated to the Indian National Congress, was inundated with members prior to the elections and scored a huge victory, taking 56 seats without a contest and winning 41 out of 61 contested seats with 48 per cent of the vote.[1] It formed a government under the man who led the anti-princely movement; but the government collapsed in six months. Over the next 22 years, residents of the Travancore area experienced a dozen governments and three periods of President's Rule from New Delhi. No government served a full term.[2] Between 1970 and 2007, however, Kerala governments have completed their full five-year terms on six occasions.[3]

Why did Kerala produce such unstable government in the earlier when in the rest of India, the period from 1947–67 was controlled by the Congress Party, and political scientists characterised this as an era of a 'dominant-party system'?

First, almost nowhere else in India had a political challenge to the Congress comparable to that of the Communist Party. This competitive struggle mobilised groups for politics. People were exhorted to identify with 'their party' — or their religion or their caste. Because literacy was high (40 per cent of the total population in 1951) and newspapers readily available, such exhortations went wide and deep in ways that other areas of India did not replicate until a generation later.

Thus the ingredients existed for locally based political organisations, calling themselves 'parties' and claiming state-wide reach though having a genuine base only in a small area. Such 'parties' split off from both left and right of politics. They gave themselves names like 'the Kerala Congress' and often added bracketed initials or names to identify the leader who was running the group — for example, Kerala Congress (Mani).

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1 *Travancore Government Gazette*, Part 2, 2 March 1948, pp. 127ff.

2 Travancore and Cochin were merged to form Travancore-Cochin in 1949. They in turn merged with Malabar District in 1956 to form Kerala. Tamil-speaking districts in the south were joined with Madras state (now Tamil Nadu).

3 The Official Web Portal of Govt. of Kerala, Political Background, <http://www.kerala. gov.in/> (7 August 2007).

Second, political leaders had to discover what the consequences of particular behaviours were. To illustrate, let me focus on Pattom A. Thanu Pillai (1885–1970). Thanu Pillai had three occasions as Chief Minister — of Travancore for a few months in 1948, of Travancore–Cochin for a few more months in 1954–55, and nearly two years in 19460–62; each government ended in collapse. Other politicians looked on and perhaps some learned. Thanu Pillai came from a background typical of India's 'freedom struggle' elites. He came from a higher caste (a Nair), and he was a lawyer, well-read in English. His critics said he was inspired by the haughtiness of princelings of old and behaved more like a Dewan (a prince's prime minister) than a democratic politician. He had been a European-dressed lawyer, practising in the Travancore courts, until 1938 when he joined the Travancore State Congress to give it the social variety it desperately needed. (To claim wide backing, it needed the support of higher-caste Hindus.) He and his colleagues caused consternation in sleepy Trivandrum when they first appeared in the local legislature wearing *khadi* — 'cloth which till two days back they would have barked at', according to a critic.[4]

Thanu Pillai, though a distinctive product of south Travancore, brought to legislative politics after independence expectations that were characteristic of many state politicians of his generation and experience. As lawyers, they were steeped in English legal precedent and British parliamentary history. They had, one might argue, swallowed the myth of 'the British party system', which suggested that political parties, once formed, behaved as disciplined units, piloted by their leaders as if they were ships. Added to such impressions was their own experience of the national movement. The Congress had emerged as the unquestioned force in Indian politics and Gandhi as the 'father of the nation.' In spite of the dissensions and desertions of the 1937–39 Congress governments in the provinces, there was nevertheless a sense that leaders like Gandhi should be followed. By extension, if a person were the Gandhi of his or her region, shouldn't such person be followed too? Such aloofness and expectations appeared to characterise Thanu Pillai.

Thanu Pillai's first short-lived Chief Ministership in 1948 ended quickly: an overwhelming Congress majority fragmented in a few months and the government fell. He left the Congress Party to become a 'socialist' and in effect took over the local franchise of one of the Indian socialist parties. Leading the Praja Socialist Party (PSP), he became coalition Chief Minister in 1954–55 and again in 1960–62 at the head of a coalition that had defeated the Communists in mid-term elections in 1960.

Thanu Pillai and those like him lacked the ideological glue to hold legislative alignments together and had not acquired the realisation of how much there was to lose by uncompromising positions. Old elites, as embodied by Thanu Pillai, had experiences and beliefs that encouraged them to take such positions; they also had connections, resources and professions that gave them something to fall back on if governments fell apart. Increasingly, however, this was not true of scores of Members of Legislative Assemblies who were being elected in Kerala. They came from less affluent circumstances, they saw politics as a career in itself, not the outcome of a career. And they began to see the defects of the inability to sustain governments.

Thanu Pillai's reputation saw him appointed to a Governor's post in 1962,[5] and in the next eight years, Kerala politics experienced three elections and two periods of President's Rule. The Communist Party itself split in 1964 into a CPI and a CPI

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[4] *Sri Mulam Assembly Proceedings*, vol. 12, 13 July 1938, p. 161.
[5] Governor of Punjab in 1962 and of Andhra Pradesh from 1964–68.

(Marxist). The ideological commitment that had been a Communist strength left the two new parties bitterly divided for years.

The fruits of Kerala's unplanned 'learning experience' began to show in 1969 and owed a good deal to a changed political style and sense of expectations, again embodied, for my purposes, in a particular politician. C. Achutha Menon (1913–91) became Chief Minister briefly in 1969 after the collapse of multi-party coalition elected in 1967. After mid-term elections in 1970 again failed to produce a victory for any party, Achutha Menon assumed leadership of what appeared an unlikely and ramshackle coalition. It ruled, however, for seven years, and Achutha Menon became the longest serving Chief Minister of the state. Kerala's era of stable coalition government began.

How had this happened? Experience and personality are part of an answer. On the surface, Achutha Menon and Thanu Pillai were similar: both were Nairs; both were lawyers. But Achutha Menon was from the more cosmopolitan area of Cochin State. As a Communist he had been underground evading the police in the late 1940s. He had been Finance Minister in the 1957–59 Communist government and stayed with the Moscow-line Communist Party of India when the Party split in 1964. Achutha Menon was also reputed to be cool-headed, erudite and honest — and, though he was only 57 in 1970, to have a bad heart.

By 1970, Kerala politicians perceived that there were few advantages for them personally in unstable governments — or indeed, long periods of President's Rule under bureaucrats. The lesson was becoming clear that compromise on a basic common program would allow the fruits of office to be tasted for a full five-year term. Such fruits were, and are, worth having — salary, offices, expenses, travel, telephones, cars and great possibilities for patronage and influence.

My argument is that in 1970 two conditions for stable coalitions were fulfilled in Kerala. First, an appreciation had emerged among many politicians that if power was to be hung onto for a beneficial period, compromises and adjustments were essential. Ideological purity, or unrestrained self-interest, were both counter-productive. The argument is not that hundreds of political aspirants suddenly came to this realisation, but, rather, that more than twenty years' experience of brief governments had taught such lessons. Second, to make such adjustments possible, there needed to be an acceptable, experienced leading figure — much more than a figurehead but less than a potential all-in-all dominator of the Indira Gandhi kind. Kerala's experience from 1948 had accelerated the education of politicians in some unwritten rules of coalition survival, and Achutha Menon's reputation and background made him the right sort of leader. The government he formed in 1970 remained in office for nearly seven years, its life extended by Indira Gandhi's 'emergency' of 1975–77.

The 1970–77 government had its share of crises and confrontations. But they were resolved without threatening the government, largely as a result of a delicate equation. It was widely perceived that a figure comparable to Achutha Menon was not readily available, and this perception grew with his reputation. The longer he was Chief Minister, and the longer the ministry worked moderately effectively, the greater the 'irreplaceable factor' became. Achutha Menon, too, cultivated the impression that his health was not good and his ambitions were few; he could leave the job if his colleagues did not want him. Such apparent detachment added to his authority, and such authority strengthened the glue that held the coalition together.

From 1970, Kerala has had a virtual two-party system with alternating coalition governments, built around the pole of the either the Congress Party or Communist Party of India (Marxist).

2.2 The Consequences of Coalitions: Kerala

What sort of government can such fragile entities provide? Kerala is frequently known for its ‘Kerala model’, a term which arises from remarkable social statistics: high literacy and life expectancy, a sex ratio favouring women, low infant mortality and a falling birthrate.

One of the causes is often held to be Kerala’s political environment, characterised by ‘public action’, to use the phrase of Amartya Sen.[6] ‘Public action’ requires that citizens be capable of organising and exerting pressure on their governments. In celebrated examples, Maternal and Child Health centres, if closed for more than a day or so, would provoke demonstrations of angry locals, organised by political parties that were *out of* power (Mencher 1980: 1781–2). Members of the Legislative Assembly (MLAs), elected from territorial constituencies, acquired a strong interest in being able to show voters that they were delivering the goods in the form of health services, housing, schools, colleges, bridges, roads and transport. The delicately poised nature of politics meant that MLAs had leverage in the capital because the threat of loss of support of even a few could generate an annoying, even fatal, crisis for a government. Thus the 1970 government pursued a well-publicised land reform that gave security of tenure to every landless labourer living on what had previously been landlord’s land. And the ‘one lakh housing’ scheme aimed to build 100,000 houses for homeless, or poorly housed, families (Jeffrey, 2001: 176–82, 204–09).

If the social and political consequences of coalitions in Kerala could produce positive results, the economic results are usually considered less positive or fruitful.[7] Kerala’s economy, based on agricultural raw materials and the export of its skilled people, depends on remittances from Malayalis working elsewhere in India or overseas. In spite of its high levels of literacy, Kerala lags well behind Indian states like Karnataka, Tamil Nadu and Gujarat in economic development. The computer industry grew up in Bangalore; call-centres, around Bangalore and Delhi; Kerala, if anything, has lost some of its traditional basic industries, like processing of cashew-nut, to neighbouring states with lower wages and laxer labour laws.

The explanation often advanced is that Kerala’s coalition governments have been unable to maintain order and implement far-sighted policies among a fractious, politically alert population. If police intervene in a labour dispute on the side of capital, the argument runs, political forces will force a coalition government to back down. One of the striking examples, which helped to cement this reputation throughout India, was the great Idukki dam project of the 1960s and 1970s which ran years over schedule because of labour disputes prolonged by a multiplicity of political influences.[8] Kerala’s coalitions have been unable both to act decisively and to enforce labour law strictly and effectively. Capital therefore avoids Kerala, and is invested in other states with majority governments able to discipline their citizens. So, at least, does this popular argument run.

2.3 Coalitions in India: Learnership and Leadership

My argument is that at the national level India has followed a pattern similar to that of Kerala. Politicians and people associated with them have needed to learn how coalitions

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6 Sen and Dreze, 1995: 51–6. Another phrase is ‘public politics’ (R. Jeffrey, 2001: 9–10).
7 See, for example, Tharamangalam (1998); Ramanathaiyer and MacPherson (2000).
8 There are benefits from such confrontations. In the 1980s, widespread protests blocked the Silent Valley dam project which would, most analysts now agree, would have been an environmental catastrophe.

work and why there was personal benefit in making them work — or at least, considerable personal loss in having them fail. Accompanying the learning there needed to be the discovery of suitable coalition leaders with particular characteristics.

At the national level, indications that the 'one-party dominant' story of Indian politics was in its final stages came with the 1967 general elections, the first after the death of Jawaharlal Nehru (1889–1964). His daughter, Indira Gandhi (1917–84), installed by party bosses as a short-term expedient, led the Congress Party to a narrow victory with only 283 seats in a lower house of 516 members (though still with 41 per cent of the vote) (Butler, Lahiri and Roy, 1995). This was a loss of 80 seats and a majority of 'only' about 20 seats (though this would seem a huge cushion to later politicians). The Congress lost control of nearly half the Indian states at the same elections. It held 60 per cent of the total seats in state legislatures in 1962; the share fell to 48 per cent in 1967 (Guha, 2007). In the states, the process of coalition-learning began in earnest. The next four years became the era of 'aya ram aur gaya ram' — the time of legislators coming and going from one party to another as state governments rose and fell throughout the country.

What are my reasons for asserting that this period of instability was part of a learning process? Ideologically, some politicians, both of the left and right, were convinced that the purity of their parties' principles had to be asserted once a role in government was achieved. At the most obvious, Communist parties would not support a government that included the right-wing Jana Sangh, which, in turn, would not support a ministry that included Communists. Face-saving measures had yet to be devised that allowed governments to function, and benefits to flow, without sullying a party's ideological purity. Such examples developed in Kerala in 1969–70 when the Congress found it possible to support a CPI-led government 'from outside' the ministry until it became comfortable to join as full-scale coalition partners. Elsewhere, experience had to teach such practical devices and the benefits of ideological elasticity. Practically, newcomers to legislatures needed to experience both the fruits of office and the rapidity with which they could disappear. In the first flush of being elected, and being able for the first time to influence the making of a state government and the patronage available from it, these newcomers (or newly influential) tended to move eagerly from one alignment to another. But, over time, it became clear that constant movement usually led to dissolution of the legislature and new elections. An MLA then stood to lose the privileges of office and had the expense of fighting another campaign with no guarantee of winning. Indeed, in Kerala experience began to show that incumbency was more likely to be harmful to than helpful. These lessons, bitterly taught to Kerala's politicians from 1948 to 1970, were learned in other Indian states between 1967 and 1977. At the national level, however, that process began in 1977, and fructified only in 1999.

There was a second element — leadership — that had to be understood. Again, instructive parallels emerge between Kerala and the national experience. Indira Gandhi had ruled with a minority government between 1969 and 1971 after the Congress Party split that she engineered. The first coalition government in New Delhi formed only in 1977 and was, in theory, a government of the Janata Party, hastily cobbled together when Mrs Gandhi ended her 19-month 'emergency' and called elections. The Janata Party was in fact a patchwork of the Jana Sangh, ex-Congress politicians and socialists. It had a number of aspirant Prime Ministers but no obvious choice, and the mantle finally fell on Morarji Desai (1896–1995), austere longtime Congress politician and Prime Ministerial aspirant since the time of Nehru. His pride and aloofness echoed characteristics of Pattom Thanu Pillai in Kerala. This was the wrong leader for the job. In 1979, his short-lived successor, Charan Singh (1902–87), was a wily regional politician, but lacking in the

breadth of experience, contacts and perspective that are characteristics of the successful coalition leader in India.

The 1989–91 period provided a further, and perhaps seminal, lesson in this experience of 'learning coalitions'. Rajiv Gandhi's huge Congress majority of 1984 (415 seats) crashed to a minority of 200 seats in 1989, and opposition parties struggled to form a government. This led to perhaps the most famous double-cross in modern Indian politics — and a lesson in the need for a basic level of probity if coalitions were to survive. V.P. Singh (b. 1931), the leading candidate, told his rival, Chandra Shekhar (1927–2007), that he, Singh, would withdraw from the contest for Prime Minister and support Devi Lal (1914–2001), a regional leader from north India. Singh did not tell Chandra Shekhar that Devi Lal would decline the office and nominate Singh — which was what happened, to Chandra Shekhar's surprise, in the crucial meeting (Malhotra, 2003). For coalitions to last, there need to be grounds for basic trust among the parties. The V.P. Singh coalition wrote a key entry about the downside of duplicity in the annals of national politics. The new coalition government lasted less than a year, and between 1989 and 1999 India experienced eight governments and seven Prime Ministers.[9] The similarity with Kerala's experience is apparent.

This era of intense coalition-learning at the national level ended in 1999 with the formation of the coalition led by the Bharatiya Janata Party. Its longtime leader A.B. Vajpayee became Prime Minister and led the multi-party government through a full five-year term. The alliance consisted of 15 parties, four of which returned only one member to the Lok Sabha. They controlled about 300 seats in a lower house of 543 members, and Vajpayee formed a 70-member ministry, which aimed to balance regional, party and individual interests (Chander, 2004). The government alliance went united, if somewhat realigned, into the 2004 elections, which it lost to the rival Congress-led alliance, again suggesting a pattern similar to that of Kerala.

It was not the mechanics of the coalition — the various balancing acts — that was, in my view, the key ingredient of the survival of the Vajapayee government of 1999–2004. Stability resulted in part from the dearly won awareness of legislators that to be in office was better than being out of it — the lessons of the previous ten years. But what had to be added were the characteristics that Vajpayee brought to the prime ministership. Though his ideological background was different, he had a number of similarities with Achutha Menon. Vajpayee (b. 1924) was 72 in 1999, and though apparently in good health was usually able to make clear to coalition members that they needed him more than he, at his age, needed them. His years of grassroots politics gave him a network and aplomb that allowed him to meet people and resolve differences with ease. He was recognised as someone who had earned his spurs and paid his dues. These have emerged as the qualities of a successful Indian coalition leader: urbanity, probity (or a reputation for it), reputation for achievement (probably in politics) and an apparent willingness for renunciation — to be able to walk away from the job if colleagues do not measure up.

Manmohan Singh (b. 1932), Vajpayee's successor after the Congress-led coalition's narrow victory in the 2004 general elections, may seem an unlikely comparison with Vajpayee. An economist trained in Punjab and at Cambridge and Oxford, he spent part of his working life abroad working for the IMF. Until 1989, he was an official, a former Governor of the Reserve Bank of India. It was a career in marked contrast to Vajpayee's devotion to the cause of Hindu-oriented politics. Manmohan Singh, however, has other characteristics in common with those of successful coalition leaders. First, in the timing

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[9] Rajiv Gandhi, V.P. Singh, Chandra Shekhar, P.V. Narasimha Rao, H.D. Deve Gowda, I.K. Gujral and A.B. Vajpayee.

of his coming to office, he has benefited from the lesson-learning that national politicians have undergone about the brevity of political life, the fruits of public office and the need for a certain stability if fruits are to be enjoyed. He has had to deal with less fractious colleagues than those who sought to build coalitions from the 1970s to the 1990s. Second, he has standing and reputation, though different from those of an Achutha Menon or Vajpayee who earned theirs in the hard scrabble of longtime politicking. His international experience, and his experience at the top of the bureaucratic tree, command respect. As a Sikh, he is 'a minority', which implies an ability to mix with both the 83 per cent 'majority' of 'Hindu India' and the other 17 per cent, the so-called 'minorities.' He has the ease and openings with a wide variety of people that Achutha Menon acquired as jailbird Communist and Vajpayee as a relentlessly campaigning politician.

Finally, Manmohan Singh came to the Prime Ministership in an unusual way, the surprise nominee of Sonia Gandhi, president of the Congress Party. At one level, it can be said that he has no political base and could not hope to win an election in his own right. On the other hand, his qualities are rare. Just as Achutha Menon and Vajpayee were able to play a card that said, 'If not me, who?', so too can Manmohan Singh. He can also do as they did: give the impression of readiness to be a renouncer — to leave the post if political turmoil becomes unacceptably great.

In summary, my argument is that people in politics need to learn through experience the conventions of successful coalition government. That experience came first in the state of Kerala through the 1950s and 1960s. At the national level, the lesson began in 1977 and resumed in 1989. An aspect of this experience is the discovery that a particular kind of leader is necessary to make coalitions stick. Such leaders cannot be stiff, aloof, doctrinaire and narrow (on the lines of Pattom Thanu Pillai and Morarji Desai). Rather, they require an ease, broad experience and a hint of reluctance sufficient to make the fractious fear a resignation. These two sets of circumstance — learnership and leadership — are not the sole ingredients of coalition-building; but they are important aspects that have tended to be overlooked.

2.4 The Consequences of Coalitions: India

Does my tentative conclusion that in Kerala, coalition government has been better for social development than economic development apply equally to the Indian experience? With great tentativeness, let me suggest that they do.

At the most general level, the decade 1991–2001 saw some of the most notable improvements in social statistics in post-independence history in a number of states. To choose two small but significant examples, in Rajasthan and Uttar Pradesh, neither state noted for its cutting-edge modernity, literacy rates grew from 39 per cent to 61 per cent and 41 per cent to 57 per cent, respectively, between 1991 and 2001.[10] Superficial observation suggests that similar advances were seen in other states and in other areas of individual well-being such as infant mortality. This is not to argue that the uncertainty of coalitions means that members of the national parliament rush round their constituencies to ensure that schools are attended, mothers and babies looked after and roads and bridges built and that their diligence results in notable change. Rather, it is to argue that coalitions at the national level do no harm to such processes and may indeed do them some good. The reasons are similar to those for Kerala in the 1960s and after. As politicians become increasingly aware of the tenuousness of their hold on office, they

[10] *Statistical Outline of India, 2003–04,* p. 126.

search for ways to improve their chances. Pleasing their constituents is one such way. The uncertainty of coalitions brings attention and diligence.

For economic development, coalition governments are generally perceived as a negative force. According to such a view, their multi-faceted fragility make them indecisive, unable to take big decisions and inclined to resile even on the decisions they make. This point is often made in contrasting India's economic development in the past 20 years with China's, where roads get built, rivers dammed and labour deals done with far greater speed and predictability.

It needs to be noted, however, that it was a fragile minority government that pursued the economic liberalisation program that began in 1991.[11] From 1996, India has known only coalition governments, yet the period is usually described as the most economically dynamic since independence.

The short answer to the question, 'Are coalitions bad for economic development?', may be that for 21st century India there is no alternative. Two factors suggest this. First, India is socially segmented — by language, religion, region and caste. Second, growing literacy, mobility and media penetration mean that larger proportions of the population than ever before are able to compare their circumstances and needs with others and to seek ways of changing their lot. Such political mobilisation usually occurs where it seems most meaningful — at the locality or the region. Thus we see, even within states, localised political groups. Such patterns are repeated for national elections. The current national government of the 'United Progressive Alliance' of 2007 had a dozen parties supporting it, plus 'outside' support from four Left parties[12] and the Bahujan Samaj Party, the Dalit-based party of Uttar Pradesh (a considerable force with 19 seats in the Lok Sabha). The previous BJP-led government similarly had more than a dozen constituents.

It is not impossible that the BJP, the Congress or indeed, a new formation could galvanise the country and win an absolute majority in national elections. Half of India now goes home each night to a place with a television set.[13] All-India messages can be shared simultaneously as never before, and an exciting personality, perhaps from the media (an M.G. Ramachandran or an N.T. Rama Rao) could conceivably create a wave of enthusiasm. But at a national level this will be exceedingly difficult. The nature of Indian society makes the coalition formula seem likely to last.

This is not necessarily a bad thing, even for economic development. Now that many of the lessons of sustained coalition government have been learned, including identification of appropriate qualities in a coalition leader, coalition governments may be expected to survive their full terms and thus provide continuity of policy. The Kerala example suggests — and Indian experience since 1991 tentatively confirms — that coalitions, and the attentive-to-their-electorate politicians they promote, may contribute positively to social development.

Moreover, the uninspiring economic story of Kerala is unlikely to be repeated nationally. The business traditions, and hold of globalised capitalism, in other parts of India will continue to impel economic change. The disparate forces driving such change are more powerful than the disparate forces that would restrain it. And national governments, intent for example on winding up unprofitable state-owned industries, will take advantage of the country's diversity. A closure in one corner of the country may

[11] Guha, *India after Gandhi*, p. 637. Congress won 244 seats in the 1991 elections and depended on independents and small regional groupings for its majority in the Lok Sabha.

[12] Communist Party of India (Marxist), Communist Party of India, All-India Forward Bloc, Revolutionary Socialist Party.

[13] Based on an estimate of 110 million television households with 5.5 people per household.

incense local political parties, but they will find it difficult to win much support from regional parties elsewhere. Thus some economic change may go ahead piecemeal and almost by stealth. This is not Chinese-style 'decisive government'; but once learnership and leadership are in place coalition governments in India appear capable of both surviving and delivering sustained, though unspectacular, social and even economic change.

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3

The Indian Economy: Current Performance and Short-Term Prospects

Raghbendra Jha

3.1 Introduction

The political economy of India's economic growth is an issue of abiding interest. Higher and sustained economic growth has, all over the world, been the surest and most time tested means of raising living standards and reducing poverty. Further, given that it is a functioning democracy, economic policy in India can often be dictated by political expediency as political parties indulge in competitive populism in the face of improvements in social indicators such as literacy, infant mortality and the like lagging behind rises in the rate of economic growth. Thus the political economy of policy formulation is an important area of concern. Finally, an analysis of what policies can be undertaken given these constraints is an important indicator of potential welfare implications of policies for such a large section of humanity.

This chapter places India's growth experience within a broader political economy perspective. It documents the broad contours of economic growth in India and then describes the increase in resources available (in the forms of higher saving and investment and lower fiscal deficit) for higher economic growth in section 3.2. It examines the recent surge in the external engagement of the Indian economy in section 3.3 whereas section 3.4 contrasts the recent performance of a rapidly growing sector (automobiles) with a laggard sector (agriculture). Section 3.5 examines some emerging constraints to rapid economic growth in India whereas section 3.6 evaluates the prospects for alleviating these constraints. Section 3.7 concludes.

3.2 The Record of Economic Growth in India

By all accounts from the 15th to the 18th century India was one of the most prosperous regions of the world with plentiful supply of highly advanced commercial and industrial techniques (Clydesdale, 2007). From 1700, however, Indian GDP per capita started to drop. For more than 400 years now India has had low incomes and low, even negative, rates of economic growth whereas its population has continued to expand. Table 3.1 compares real per capita GDP and GDP in 1990 international dollars and population between India and the United Kingdom over the period 1600 to 1947, when India attained independence from British rule.

India's per capita GDP which in 1600 was 56.4 per cent of the UK's, remained stagnant and even fell for a while during the period until 1947 at which time UK's per capita GDP was 10.3 times that of India. The ratio of UK's per capita GDP to Indian GDP grew from 2.63 in 1757 (an approximate date for the beginning of British rule in

India) to 5.22 in 1857 and 10.29 in 1947. Over the same period the ratio of India's population to British population fell from 14.03 in 1757 to 8.05 in 1857 and rose only marginally to 8.36 in 1947. The ratio of British GDP to Indian GDP was 0.187 in 1757, but rose to 0.648 in 1857 and 1.23 in 1847. Thus in 1947 British GDP surpassed India's.

Table 3.1: Comparative Macroeconomic Performance of India and Britain, 1600–1947

	1600	*1700*	*1757*	*1857*	*1947*
	Per capita GDP (1990 international dollars)				
India	550	550	540	520	618
United Kingdom	974	1250	1424	2717	6361
	Population (000)				
India	135000	165000	185000	227000	414000
United Kingdom	6170	8565	13180	28187	49519
	GDP (million 1990 international dollars)				
India	74250	90750	99900	118040	255852
United Kingdom	6007	10709	18768	76584	314969

Source: Maddison (2007), ©OECD, reprinted with permission.

However, India's colonial experience was not unique since most colonies that did not result in settlements had poor records of economic growth, even stagnation (Tables 3.2 and 3.3). Table 3.2 shows levels of GDP per capita in the major European colonial powers and some colonies for about 500 years. Table 3.3 provides information on growth rates in the same countries.

Table 3.2: Levels of GDP per capita in European Colonial Powers and Former Colonies, 1500–1998 (1990 international dollars)

	1500	*1700*	*1820*	*1913*	*1950*	*1998*
	European Colonial Powers					
Britain	762	1405	2121	5150	6907	18714
France	727	986	1230	3485	5270	19558
Italy	1100	1100	1117	2564	3502	17759
Netherlands	754	2110	1821	4049	5996	20224
Portugal	632	854	963	1244	2069	12929
Spain	698	900	1063	2255	2397	14227
	Former Colonies					
China	600	600	600	552	439	3117
India	550	550	533	673	619	1746
Indonesia	565	580	612	904	840	3070
Brazil	400	460	646	811	1672	5459
Mexico	425	568	759	1732	2365	6655
United States	526	715	880	2736	3446	18183

Source: Maddison (2007), ©OECD, reprinted with permission.

Whereas the European colonial powers and the settlement countries, for example, the US, recorded positive rates of growth of per capita GDP, period growth rates in the colonies were stagnant, if not negative, before their respective independence.[1]

Table 3.3: Growth of per capita GDP in European Colonial Powers and Former Colonies, 1500–1998 (annual average compound growth rates)

	1500–1700	*1700–1820*	*1820–1913*	*1913–1950*	*1950–1998*
	European Colonial Powers				
Britain	0.31	0.34	0.96	0.80	2.10
France	0.15	0.18	1.13	1.12	2.77
Italy	0.00	0.01	0.90	0.85	3.44
Netherlands	0.52	-0.12	0.86	1.07	2.56
Portugal	0.15	0.10	0.27	1.38	3.89
Spain	0.13	0.14	0.81	0.17	3.78
	Former Colonies				
China	0.00	0.00	-0.08	-0.62	4.17
India	0.00	-0.03	0.25	-0.23	2.18
Indonesia	0.01	0.04	0.42	-0.20	2.74
Brazil	0.07	0.28	0.89	0.85	2.18
Mexico	0.15	0.24	0.89	0.85	2.18
United States	0.14	0.73	1.56	1.61	2.21
Ireland	0.15	0.17	1.23	0.63	3.53

Source: Maddison (2007), ©OECD, reprinted with permission.

Thus the colonial experience was impoverishing for several colonies. In India itself the effects went beyond the purely economic as the following quote from the Nobel laureate poet Rabindranath Tagore reveals:

> Rudely shaken out of my dream I began to realise that perhaps in no other modern state was there such hopeless dearth of the most elementary needs of existence. And all the time before our eyes Japan has been transforming herself into a mighty and prosperous nation. I have also been privileged to witness the unsparing energy with which Russia has succeeded in steadily liquidating ignorance and poverty wiping off the humiliation from the face of a vast continent. I cannot help contrasting two systems of governance: one based on cooperation and the other on exploitation. Thus, while these other countries were marching ahead, India smothered under the dead weight of British administration lay static in her utter helplessness. (Tagore, 1941: 637)

Table 3.2 reveals that despite India's dismal economic performance for 350 years India's GDP per capita in 1950 was higher than China's. Currently China's GDP per capita is higher than India's by a factor of almost 3 indicating that since independence India's advantage over China has disappeared. India's post independence growth did not

[1] In an important work Nurkse (1953) emphasized the difference between the settlement and non settlement countries among the set of colonized countries as involving the method of financing of capital. Whereas the bulk of investment in settlement countries was through equity the non-settlement countries received loans, which they had to service. This debt servicing put onerous burdens on the already fragile economies of the non-settlement colonized countries (Maddison, 2007).

have an auspicious start, although growth has accelerated considerably of late. It is thus pertinent to examine India's growth experience in the post independence era in some detail.

The record of economic growth (annual rate of growth of real GNP) in independent India has been uneven. Until about 1980 growth rates were low and subject to considerable volatility. This record has improved since then. Salient characteristics of aggregate economic growth in India are depicted in Table 3.4.

Table 3.4: Some Basic Characteristics of Growth of Real GNP in India

Period	*Mean Annual Growth Rate (percentages)*	*Standard Deviation of Year to Year Growth Rate (percentages)*
1951–52 to 1959–60	3.58	2.62
1960–61 to 1969–70	3.91	3.64
1970–71 to 1979–80	3.05	4.16
1980–81 to 1989–90	5.65	2.27
1990–91 to 1999–00	5.83	1.97
1992–93 to 1999–00	6.46	1.16
2001–02 to 2005–06[a]	6.82	1.99
2001–02 to 2005–06 (2002–03 excluded)	7.55	1.2

N.B. (a) 2002–03 was a significant drought year and its inclusion raised the standard deviation of the growth rate. If 2002–03 is excluded the average growth for 2001–02 to 2005–06 would have been 7.55 per cent and the standard deviation 1.2.

Source: Author's calculation based on data from Reserve Bank of India *Handbook of Statistics on the Indian Economy*

In aggregate terms growth appears to have picked up significantly since the 1980s. Further, the variability of this growth (as measured by the standard deviation) has come down significantly. Per capita GDP growth which was 1.2 per cent per annum during 1972–82, accelerated to 3.0 per cent during 1982–92 and further to 3.9 per cent during 1992–2002. In recent times it has accelerated even further. So the Indian economy has been enjoying high and relatively stable rates of growth for more than a quarter century now. Recent experience of economic growth (and its sectoral composition) is shown in Table 3.5 and Figure 3.1.

Table 3.5 displays broad averages of sectoral growth rates as well as the significance of these sectors measured by their shares in GDP. Growth rates have picked up considerably since 2000–01, particularly in services and manufacturing. The global slowdown due to current credit crunch has had only a limited impact on GDP growth in India. At the sectoral level agricultural growth has continued to fluctuate considerably even as the share of agriculture in GDP has come down sharply.[2] Manufacturing sector growth rates have not been particularly high, until recently, and the share of industry in GDP has been stagnant at about 20 per cent. Manufacturing growth was high in the initial years of the post reforms period but fell sharply in 2001–02. The subsequent pick-up in 2002–03 was probably because of the lower base in 2001–02. However, industrial growth rates have

[2] The share of agriculture in employment is, however, much higher. One of the current important anomalies in the Indian economy is that a sector that produces 25 percent of GDP employs 65 precent of the labour force.

since been robust and have become comparable to growth rate of services. Growth in mining has been less spectacular. Growth in electricity production has been slow — perhaps reflecting the poor state of electricity generation and, particularly, transmission and distribution in India. The highest growth sector has been services. Growth in this sector has occurred across a broad range and has been the most stable of all sectoral growth rates. As a consequence, the share of services in GDP has gone up substantially.

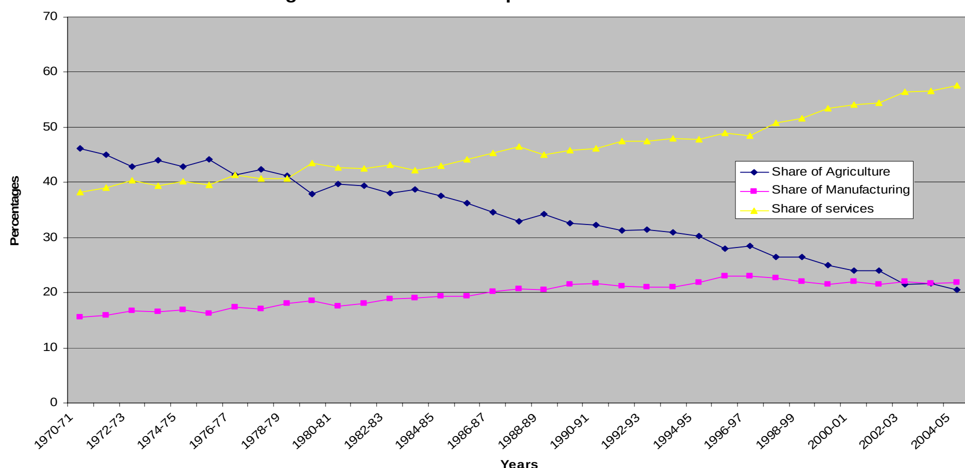
Table 3.5: Growth Rates of Real GDP (%)

Sector	1993–94 to 2002–03 (average)	2000–01 to 2007–08 average	2005–06	2006–07	2007–08#	2007–08		
						Q1	Q2	Q3
1. Agriculture & Allied Activities	2.1 (26.5)	2.6 (20.8)	5.9 (19.6)	3.8 (18.5)	2.6 (17.5)	3.8	3.7	3.2
2. Industry	6.6 (22.1)	7.2 (19.6)	8.0 (19.4)	10.6 (19.5)	8.6 (19.5)	10.6	8.3	8.4
2.1 Mining and Quarrying	4.7	4.8	4.9	5.7	3.4	3.2	7.7	4.9
2.2 Manufacturing	7.1	7.9	9.0	12.0	9.4	11.9	8.6	9.3
2.3 Electricity, Gas & Water supply	5.2	5.0	4.7	6.0	7.8	8.3	7.3	5.3
3. Services	7.8 (51.4)	8.9 (59.6)	11.0 (61.1)	11.2 (61.9)	10.6 (63.0)	10.6	10.4	10.3
3.1 Trade, Hotels, Restaurants, Transport, Storage & Communication	8.8	10.3	11.5	11.8	12.1	11.9	11.4	11.3
3.2 Financing, Insurance, Real Estate & Business Services	8.0	8.8	11.4	13.9	11.7	11.1	10.7	11.6
3.3 Community, Social & Personal Services	6.9	5.8	7.2	6.9	7.0	7.6	7.7	7.6
3.4 Construction	5.7	10.5	16.5	12.0	9.6	10.7	11.1	8.4
4. Real GDP at Factor Cost	6.0 (100)	7.2 (100)	9.4 (100)	9.6 (100)	8.7$ (100)	9.3	8.9	8.4

Notes: Figures in parentheses denote shares in real GDP.
Advance estimates, $ In May 2008 this estimate was revised to 9 per cent.
Source: Reserve Bank of India.

As a consequence of such rapid growth India is now a huge market with a large and young population with a median age of 24.9 years. As much as 95.1 per cent of India's billion plus population is below the age of 65, with almost a third being younger than 14. India is already a US$1 trillion plus (at market exchange rates) economy. By some reckoning India's middle class (those earning between US$2000 to $22,000 a year) is 300 million strong. More importantly this young labour force is keen to enrich itself quickly and to compete with the outside world — witness India's persistent double-digit export growth in recent years. Furthermore, India's growth is likely to be less dependent on global growth than other Asian countries since it does not rely excessively on manufacturing exports.[3] The service sector accounts for more than 31 per cent of India's exports. Thus any downturn in the global economy may have less impact on India.

[3] One concern attending recent economic growth in India is that since it has been demand led and faces key infrastructural constraints, inflation has picked up. In particular, CPI-AL (the consumer price index for agricultural laborers — the price index most relevant for the poor in India) has risen more rapidly than the wholesale price index or the CPI-IW (the consumer price index for industrial workers). The RBI raised the cost of borrowing successively to rein in inflation. This move seems to be having the desired effect and good summer and winter crops during 2007–08 indicate further moderation of inflation, although the incomplete pass-through of the recent surge in petroleum prices points to suppressed inflationary tendencies.



Source: Based on data from *Handbook of Indian Statistics* (2006), Reserve Bank of India.

Factors Accelerating Economic Growth in India

The current high rate of economic growth could well accelerate further as Kelkar (2004) has opined. Contributing to this acceleration is a broad series of reforms including financial sector reforms, increased globalisation and widening and deepening of product and financial markets which get reflected in key indicators such as market capitalisation of the stock market, the technology and transparency of transactions, the sets of instruments traded, balance sheets of financial institutions and the degree of openness of the economy. At the same time a benign FDI policy framework has permitted greater tie-ups in high technology areas for production for domestic as well as external markets. However, financial sector reforms began only in 1993 and are yet to be completed.[4]

I now comment on some factors responsible, in a growth accounting sense, for the acceleration in economic growth.

Productivity Growth

The higher GDP growth rate beginning in the 1980s has been accompanied by an even sharper acceleration in total factor productivity growth. Table 3.6 documents the acceleration in total factor productivity growth in India. Even though agricultural factor productivity growth actually dropped in the post-reform period (1993–04) industry and, particularly, services sector productivity growth accelerated sufficiently to more than double aggregate factor productivity growth in 1993–04 as compared to the previous period, 1978–92.

Many explanations for this rise in productivity growth have been offered including Keynesian type demand-led expansion in the 1980s, the advent of the Green Revolution, and possible external and internal liberalisation. Attention has also focused on attitudinal changes in the governments of Indira and later, Rajiv Gandhi. These administrations began viewing private investment and enterprise more favorably and modest reforms were initiated. This had salutary effects on manufacturing sector productivity and later had substantial spillover effects. As a result, the growth rate picked up. Such beneficial

[4] For a review of financial sector reforms in India see Sharma (2004).

synergies were helped by the climate of deregulation and delicensing started in the early 1990s. Others have placed much stronger emphasis on the role of the post 1991 reforms and downplayed the role of policy initiatives of the 1980s.[5]

Table 3.6: Sources of Growth in India: Aggregate and by Major sectors (% per year)

Aggregate Economy							
				Contribution of			
Period	*Output*	*Employment*	*Output per worker*	*Physical capital*	*Land*	*Education*	*Factor productivity*
1978–04	5.4	2.0	3.3	1.3	0.0	0.4	1.6
1978–93	4.5	2.1	2.4	1.0	-0.1	0.3	1.1
1993–04	6.5	1.9	4.6	1.8	0.0	0.4	2.3
Agriculture							
1978–04	2.5	1.1	1.4	0.4	-0.1	0.3	0.8
1978–93	2.7	1.4	1.3	0.2	-0.1	0.2	1.0
1993–04	2.2	0.7	1.5	0.7	-0.1	0.3	0.5
Industry							
1978–04	5.9	3.4	2.5	1.5		0.3	0.6
1978–93	5.4	3.3	2.1	1.4		0.4	0.3
1993–04	6.7	3.6	3.1	1.7		0.3	1.1
Services							
1978–04	7.2	3.8	3.5	0.6		0.4	2.4
1978–93	5.9	3.8	2.1	0.3		0.4	1.4
1993–04	9.1	3.7	5.4	1.1		0.4	3.9

Source: Bosworth and Collins (2007)

Improvements in Labour Supply

Adding to the impetus for higher economic growth are certain structural changes occurring in the Indian economy — particularly on the supply side. In 2000 the proportion of the Indian population in the working age group (15–64 age bracket) was 60.9 per cent. The UN's Population Division has projected that this ratio will surpass the proportion of Japanese in this age group by 2012 and climb to over 66 per cent in 30 years. At that point in time it is poised to overtake China's population in the same age group. This is a very significant projection.

At the same time a quiet revolution is taking place in nutritional status in India with calorie and other macro and micro nutrient deficiency on the decline. . Further, during the period 1991 to 2001 the literacy rate climbed from 51.54 per cent to 65.38 per cent in the aggregate, from 63.3 per cent to 75.85 per cent for males and from 38.79 to 54.16 per cent for females, according to figures of the 2001 Census of India. Thus India's labour force is younger, better nourished and has more skills than before and is undergoing rapid structural transformation. These changes imply substantial quality improvements in the

[5] There has been a debate of sorts about whether attitudinal changes in the government bureaucracy or actual policy changes are better explanations for the acceleration in economic growth in India. In a country with an autarkic trade regime and a highly centralized administrative structure, attitudinal changes may well be the hardest to make. Hence, both policy measures as well as attitudinal changes should be regarded as essential as well as complementary explanations for this surge in the rate of growth.

Indian labour force. Economic theory and international experience leads us to believe that this will lead to sharp rises in labour productivity and an upward shift in the trend long run rate of growth of the Indian economy.

Higher Savings for Enhanced Economic Growth

Central to the growth success story has been a steady rise in India's saving and investment rates as Table 3.7 indicates.

Table 3.7: Savings and Investment in India

Savings and Investment (base: 1999–2000) as % of GDP at Current Market Prices							
	1999–00	*2000–01*	*2001–02*	*2002–03*	*2003–04*	*2004–05*	*2005–06 (est.)*
Gross Domestic Savings, of which	24.8	23.4	23.5	26.4	29.7	31.1	32.4
a) Public	-0.8	-1.9	-2.0	-0.6	1.2	2.4	2.0
b) Private, of which	25.6	25.3	25.5	27.0	28.5	28.7	30.4
i) Household, of which	21.1	21.0	21.8	22.7	23.8	21.6	22.3
Financial	10.6	10.2	10.8	10.3	11.3	10.2	11.7
Physical	10.5	10.8	10.9	12.4	12.4	11.4	10.7
ii) Private corporate	4.5	4.3	3.7	4.2	4.7	7.1	8.1
Gross Domestic Investment, of which	25.9	24.0	22.9	25.2	28.0	31.5	33.8
Public	7.4	6.9	6.9	6.1	6.3	7.1	7.4
Private	17.9	16.5	16.3	18.4	19.4	21.3	23.6
Valuables	0.8	0.7	0.6	0.6	0.9	1.3	1.2
Gross Fixed Capital Formation, of which	23.4	22.8	23.0	23.8	24.8	26.3	28.1
Changes in stocks	1.9	0.6	0.2	0.7	0.8	2.0	2.9
Valuables	0.8	0.7	0.6	0.6	0.9	1.3	1.2
Saving — Investment	-1.1	-0.6	0.6	1.2	1.6	-0.4	-1.3
Public	-8.2	-8.8	-8.9	-6.6	-5.2	-4.7	-5.4
Private	7.7	8.8	9.2	8.6	9.2	7.4	6.9

Source: *Economic Survey*, Government of India, 2006–07

Savings have risen from 23.4 per cent of GDP in 2000–01 to 32.4 per cent in 2005–06 and estimated to be 35.6 per cent in 2007-08. Between 2000–01 to 2005–06 investment rose from 24 per cent of GDP to 33.8 per cent of GDP and was estimated to be 36.3 per cent in 2007–08. Public sector saving turned positive in 2003–04 indicating improved tax and budgetary performance and the implementation of the Fiscal Reforms and Budget Management Act (FRBMA) in 2002–03. With 33.8 per cent investment in 2005–06 India was able to obtain 9 per cent GDP growth whereas China has obtained 9 per cent growth with investment rates of over 40 per cent. Thus the productivity of capital is higher in India than in China.

As India seeks to accelerate its growth rate even further in order to reduce poverty and become a major player in the global economy, raising the saving and investment rates through lowering fiscal deficits will be key. In recent times, particularly since the enactment of the FRBMA, India's fiscal deficit situation has improved as indicated in

Table 3.8. However, further reductions seem more difficult and in the meantime public debt is nearly 75 per cent of GDP. External debt is low, with a large share in long term debt. Hence pressures on the exchange rate because of high external debt are minimal. In addition India's foreign exchange rate reserves on 18 January 2008 stood at US$284.898 billion, a substantial part of which comes from sterilisation operations to keep the exchange rate competitive for exporters.

Table 3.8: India: Key Fiscal Indicators (% of GDP)

Year	*Primary Deficit*	*Revenue Deficit*	*Gross Fiscal Deficit*	*Outstanding Liabilities (including external liabilities at historic exchange rates)*
		Centre		
2002–03	1.1	4.4	5.9	63.4
2003–04	-0.03	3.6	4.5	62.8
2004–05	-0.04	2.5	4.0	63.8
2005–06	0.4	2.6	4.1	63.4
2006–07 (RE)	0.2	2.0	3.7	61.5
2007–08 (BE)	-0.2	1.5	3.3	59.2
		States		
2002–03	1.3	2.2	4.2	32.5
2003–04	1.5	2.2	4.5	33.4
2004–05	0.7	1.2	3.5	33.3
2005–06	0.1	0.04	2.4	32.5
2006–07 (RE)	0.4	0.1	2.8	30.8
2007–08 (BE)	0.1	-0.3	2.3	29.8
		Combined		
2002–03	3.1	6.6	9.6	80.7
2003–04	2.1	5.8	8.5	81.4
2004–05	1.4	3.7	7.5	82.4
2005–06	1.0	2.6	6.6	80.5
2006–07 (RE)	0.9	2.1	6.4	77.5
2007–08 (BE)	0.2	1.3	5.5	74.8

Notes: RE= Revised Estimates BE= budget estimates

Source: Reserve Bank of India

3.3 India's External Sector Performance

Another notable aspect of the recent acceleration in India's economic growth has been its increasing economic integration with the global economy. International trade reforms have proceeded rapidly in India. India missed the first phase of trade liberalisation in the post-War period but is has not done so this time around. Indian manufacturing tariffs are now low by world developing country standards: 12.5 per cent or below and Indian anti-dumping appears to be slowing down. India is far less dependent on tariffs for government revenue but agricultural tariff reduction has not kept pace with industrial tariff liberalisation. As a consequence India's exports have surged and India's export basket is geared towards high value added items such as engineering goods (Tables 3.9–3.11).

Table 3.9: Growth in Exports (%)

Region/Country	*2004*	*2005*	*2006 (Jan to Oct)*	*2007 (Jan to Oct)*
World	21.2	14.1	14.6*	13.8*
Industrial Countries	17.3	8.5	10.9*	13.1*
USA	12.9	10.8	14.8	11.9
Germany	21.3	7.3	11.0*	18.9*
Japan	19.9	5.2	8.1	8.9
Developing Countries	27.3	22.1	19.2	15.7
China	35.3	28.4	19.6	17.1
India	28.2	29.6	26.8	26.5
Korea	31.0	12.0	14.6#	14.1#
Singapore	24.6	15.6	20.1	9.7
Malaysia	26.5	12.0	13.2	9.1
Thailand	19.8	14.5	17.8	16.7

Note: * January–September; #:January–November
Source: MF (International Financial Statistics) and RBI.

Table 3.10: Commodity Composition of India's Exports

	Percentage Share			*Growth Rate (in US $ terms)*		
Commodity Group	*2004–05*	*2005–06*	*2006–07 (Apr–Oct)*	*2004–05*	*2005–06*	*2006–07 (Ap–Oct)*
1. Primary Products, of which	16.0	15.4	13.9	36.2	18.9	17.3
Agriculture & allied	10.5	10.2	9.9	11.7	19.8	25.4
Ores & Minerals	5.5	5.2	4.0	136.5	17.4	1.1
2. Manufactured Goods, of which	74.2	72.0	69.0	24.9	19.6	17.6
Textiles incl. RMG	14.9	14.5	9.8	5.3	20.4	11.7
Gems & Jewellery	16.5	15.1	12.9	30.2	12.8	-4.4
Engineering goods	20.7	20.7	22.5	40.2	23.4	37.0
Chemicals & related products	12.2	11.6	10.4	33.9	17.3	14.8
Leather & Manufactures	2.9	2.6	1.8	12.0	11.1	5.7
Handicrafts (incl. carpet handmade)	1.2	1.2	1.0	-7.0	30.2	-7.3
3. Petroleum, Crude & products (incl. coal)	8.5	11.5	16.3	91.2	66.2	85.3
Total exports	100.0	100.0	100.0	30.8	23.4	25.3

Source: Economic Survey Government of India.

Table 3.11: India's Merchandise Trade

	US $ billion				
	2004–05	*2005–06*	*2006–07*	*2006–07 (Apr to Nov)*	*2007–08 (Apr to Nov)*
Exports	83.5	103.1	126.4	80.6	98.3
Imports	111.5	149.2	185.7	119.1	151.1
Oil	29.8	44.0	57.1	39.4	43.3
Non-Oil	81.7	105.2	128.6	79.7	107.8
Trade Balance	-27.9	-46.1	-59.4	-38.5	-52.8
Non-oil trade balance	-5.1	-13.6	-20.9	-11.9	
	Variation (per cent)				
	2004–05	2005–06	2006–07	2006–07 (Apr to Nov)	2007–08 (Apr to Nov)
Exports	30.8	23.4	22.6	26.2	21.9
Imports	42.7	33.8	24.5	27.4	26.9
Oil	45.1	47.3	30.0	42.0	9.8
Non-Oil	41.8	28.8	22.2	21.3	35.3

Source: RBI.

India's large earnings from invisibles (particularly software) and transfers (Table 3.12) enable the country to have manageable current account deficits even though the deficit on the trade account is relatively high.

Furthermore, the Foreign Direct Investment (FDI) regime has been considerably liberalised and the World Investment Report 2006 mentions India as among the top 15 recipients of FDI with improved prospects for the intermediate run. The World Investment Report 2007 reported that in 2006 India received FDI worth more than S17 billion 'an amount equivalent to the combined inflows to that country of the preceding three years.' (World Investment Report 2007: p. xviii.)

Table 3.12: Invisibles Account (Net) US $ million

	2005–06	*2006–07 (Apr–Sep)*	*2007–08 (Apr–Sep)*
1. Services , of which	23881	14298	14689
Travel	1389	240	376
Transportation	-1550	55	-1314
Insurance	22	273	313
Government, not included elsewhere	-197	-86	-78
Software	22262	12085	15097
Other Services	1955	1731	295
2. Transfers	24284	11211	18443
3. Investment Income	-4921	-1786	-1241
4. Compensation of Employees	-589	-265	-203
Total	42,655	23,458	31,688

3.4 Illustrations of High Growth and Stagnation in the Indian Economy

The broadening of the base for rapid growth in the Indian economy from service to include industry has meant that there has been rapid growth of incomes. Based on repeated surveys of consumer expenditure at the household level the National Council of Applied Economics Research has suggested that real incomes are expanding rapidly.

While the middle class accounted for barely 5.7 per cent of all Indian households in 2001–02, it owned 60 per cent of the air-conditioners and 25 per cent of all TVs, refrigerators and motorcycles. By 2009–10 the middle class is projected to account for 13 per cent of the households. NCAER predicts that the market for cars will grow at 20 per cent a year, while motorcycles will clock growth of 16 per cent per year

The projected consumption boom isn’t just restricted to urban India. On the contrary, the NCAER survey suggests that the urban demand for some relatively low-end products will be saturated by the end of the decade, while rural demand picks up. The emergence of the middle class is a signal of maturity and is the most important stabilising force in the Indian economy. The 61st Round of NSS conducted in 2005 shows a significant increase in aggregate rural household expenditure compared with a decade ago. This is reflected in higher penetration levels in rural households of almost all major items. Motorcycles are now owned by close to 8 per cent of rural households, compared with about 2 per cent 10 years ago. Over 25 per cent of rural households have TV sets, again about four times as many as a decade ago. Four per cent of rural households have refrigerators, while about 38 per cent have ceiling fans. These penetration levels too are several multiples of their magnitudes of a few years ago. The rural sector has also provided a major boost for the growth of mobile telephony in India. There is, therefore, little question that rural households have begun to gain ground as far as the quality of life attributes goes.

I now present some evidence of the performance of a high growth sector, automobiles, and the stagnation of another — agriculture. Table 3.13 records the rapid growth in production and exports of the automobile industry.

The performance of agriculture, however, has been a matter of concern. Table 3.14 indicates average growth in area, production and yield under foodgrains, non foodgrains and all crops.

The contrast between the pre-reform and the post-reform periods in respect of the performance of agriculture is quite stark. Even of we define the pre-reform period to go as far back as the 1950s, when agricultural operations were subject to very high risks, except for the yield of non-foodgrains the performance in respect of rates of growth of area, production and yield was worse in the post reform period 1990–91 to 2004–05. Except for the growth of area under foodgrains performance during the 1980s was the best. The Green Revolution era was significant for Indian agriculture in more ways than one.

The stark conclusion about the near stagnation of productivity in Indian agriculture in the post reform period at the aggregate can be contrasted with the figures on yields reported for individual crops. Yields for major foodgrains grew faster in the 1980s than in the post reform period. The performance of some individual non-foodgrains has, however, been better in the post reform period but the performance of all non-foodgrains as a whole remains lacklustre.

One of the principal reasons for the stagnation of growth in agriculture has been the stagnation of agricultural investment. The performance of investment in Indian agriculture in comparison to investment in general is sketched in Figure 3.2 below.

Table 3.13: India: Automobile Production and Export

Automobile Production (Numbers in 000)						
	2000–01	*2001–02*	*2002–03*	*2003–04*	*2004–05*	*2005–06*
Passenger Cars	513	564	609	842	961	1046
Multi-utility vehicles	128	106	112	146	249	263
Commercial vehicles	157	163	204	275	350	391
Two wheelers	3,759	4,271	5,076	5,625	6,527	7,600
Three wheelers	203	213	277	341	374	434
Total	4,759	5,316	6,280	7,229	8,461	9,735
Growth (per cent)	-2.00	11.70	18.60	15.12	16.80	14.97
Automobile Export (Numbers in 000)						
	2000–01	*2001–02*	*2002–03*	*2003–04*	*2004–05*	*2005–06*
Passenger Cars	23	50	71	126	161	170
Multi-utility vehicles	4	3	1	3	6	5
Commercial vehicles	14	12	12	17	30	41
Two wheelers	111	104	180	265	367	513
Three wheelers	16	15	43	68	67	77
Total	168	185	307	479	620	806
Growth (per cent)	20.24	9.74	65.35	55.98	31.25	28.03

Source: *Economic Survey*: Government of India 2006–07.

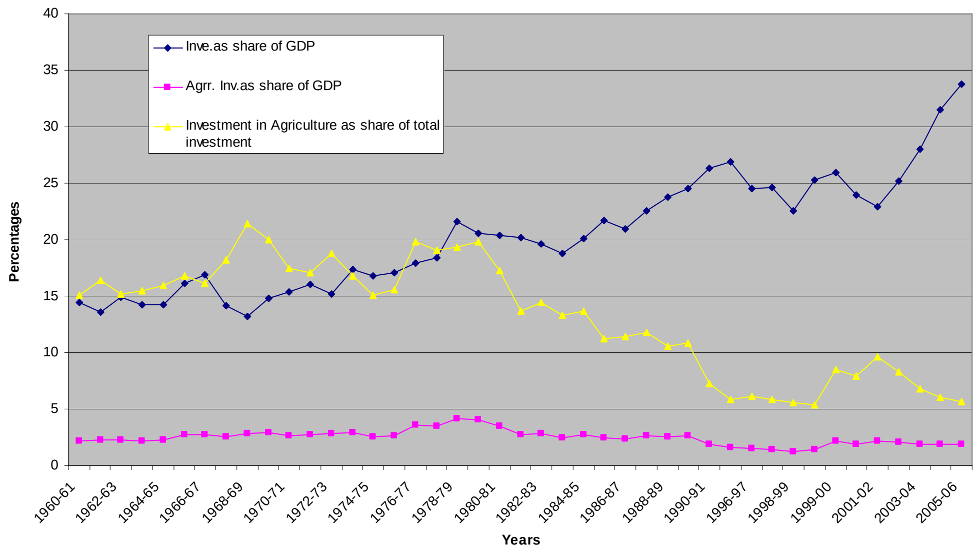
Table 3.14: Average Growth rates of Area, Production and Yield under Foodgrains, Non-foodgrains and All Crops (percentages)

	Foodgrains			*Non-foodgrains*			*All crops*		
	Area	*Produc-tion*	*Yield*	*Area*	*Produc-tion*	*Yield*	*Area*	*Produc-tion*	*Yield*
1950–51 to 1993–94	0.53	2.99	2.03	1.51	3.33	1.30	0.81	3.05	1.72
1993–94 to 2004–05	0.30	1.44	0.90	0.34	2.63	1.49	0.33	1.72	1.11
1950–51 to 1959–60	1.64	2.79	0.99	2.06	3.13	-0.25	1.91	2.81	0.56
1960–61 to 1969–70	0.63	2.96	2.01	0.97	3.08	1.35	0.71	2.96	1.71
1970–71 to 1979–80	0.19	1.38	0.53	0.75	1.78	0.98	0.32	1.44	0.65
1980–81 to 1989–90	-0.02	3.33	2.88	1.10	3.89	2.24	0.24	3.45	2.57
1990–91 to 1993–94	-0.80	2.03	2.00	2.40	3.18	1.20	0.08	2.45	1.65
1950–51 to 1989–90	0.61	2.61	1.60	1.22	2.97	1.08	0.79	2.66	1.37
1990–91 to 2004–05	-0.07	1.64	1.27	1.03	2.81	1.39	0.25	1.96	1.29

Source: Author’s computation based on Reserve bank of India’ Handbook of Statistics on the Indian Economy.

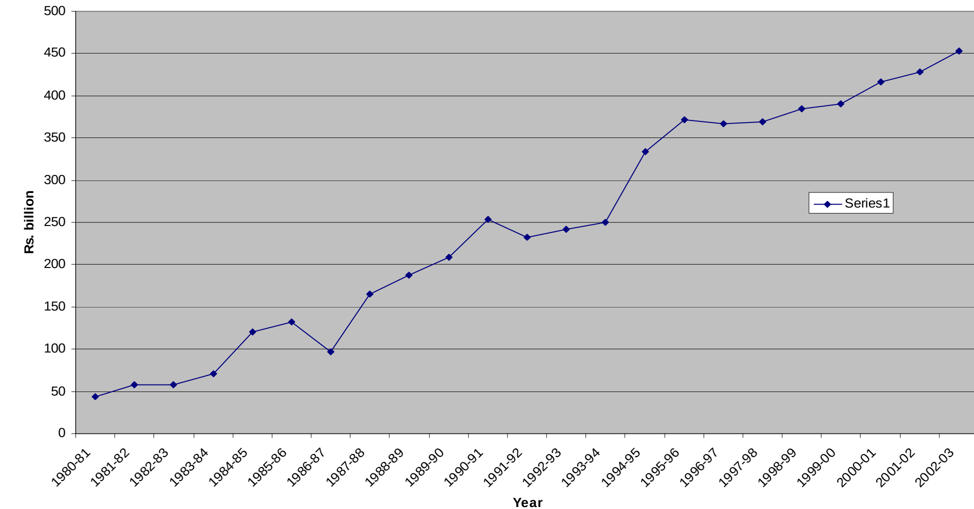
As Figure 3.2 shows whereas investment as a proportion of GDP has been on a rising trend since the 1970s agricultural investment as a share of total investment has been falling since the 1980s. There was a mild revival between 1999–00 and 2002–03 but, since then, agricultural investment as a proportion of GDP has resumed its downward trend. This is in sharp contrast to the spurt in aggregate investment since 1999–00. Agricultural investment as a proportion of GDP has also been falling. However the subsidy for agriculture has risen sharply (Figure 3.3).

Figure 3.2: Investment in Indian Agriculture



Source: Computed from Figures provided by Central Statistical Organisation.

Figure 3.3 Agricutural Subsidies at 2000-01 Prices (Rs. billion)



Source: Computed from Mullen et al. (2005).

3.5 Emerging Constraints on Rapid Economic Growth in India

Although India's economic growth record has been truly impressive the country does not perform as well on a broader set of human development indicators. India's Human Development Indicator (HDI) rank in 2003 was 127th which improved only marginally to 126th in 2005. Some of these shortcomings have transformed themselves into constraints on rapid economic growth in India. Evolution of the Indian economy according to the sanguine aggregate picture sketched above is subject to how these constraints to rapid economic growth in India work themselves out. We classify these constraints in four categories: (i) increasing spatial inequality; (ii) stagnating employment; (iii) high fiscal deficit; and (iv) inadequate growth of infrastructure. These constraints often reinforce each other — particularly through the democratic political process. I now discuss these in turn.

Increasing Regional Inequality

The aggregate economic growth narrative presented above masks substantial spatial variations. Table 3.15 presents evidence on the standard deviation, mean and coefficient of variation real net state domestic product at factor cost for the following states and union territories: Andhra Pradesh, Assam, Bihar, Jharkhand, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Punjab, Rajasthan, Sikkim, Tamilnadu, Uttar Pradesh, Uttaranachal, West Bengal, Delhi, and Pondicherry between 1993–94 and 2004–05. Although mean SDP per capita has been rising, standard deviation has been rising even faster, and nearly doubled over this period, with the result that the coefficient of variation went up from 0.45 in 1993–94 to 0.56 in 2004–05, indicating an increase of 24.4 per cent in 12 years.[6] Thus, real state domestic products per capita are increasingly diverging.

Table 3.15: Standard Deviations, Means and Coefficients of Variation of Real Net State Domestic Product per capita across India's States and Union Territories: 1993–94 to 2004–05

State/Union Territory	*Standard Deviation*	*Mean*	*Coefficient of Variation*
1993–94	3985.058	8717.179	0.45715
1994–95	4252.481	9065	0.46911
1995–96	4468.605	9336.643	0.478609
1996–97	5130.739	9992.786	0.513444
1997–98	5453.403	10466.79	0.52102
1998–99	6033.281	11041.5	0.546419
1999–00	6104.594	11319.75	0.539287
2000–01	6503.434	11591.46	0.561054
2001–02	6734.688	11960.54	0.563076
2002–03	7473.1	12594.61	0.593357
2003–04	7270.309	13116.75	0.554277
2004–05	7853.65	13864.93	0.56644

Source: Author's calculations based on data in Handbook of Statistics on the Indian Economy, Reserve Bank of India.

6 Although the trend in coefficient of variation is distinctly upward, there was a drop between 2002–03 and 2003–04, following which there was a resumption of the upward trend.

This increasing divergence across the states gets reflected in other critical areas as well, for example the regional incidence of poverty, particularly rural poverty. Jha (2004) shows that economic reforms have been accompanied by a rising coefficient of variation (across fifteen major Indian states) of the head count ratio of poverty. This coefficient of variation has had a distinct upward trend — particularly in the 1990s.

Jha (2004) shows that there is lack of convergence (in a formal statistical sense) in the incidence of rural poverty across Indian states both in terms of their ranks with respect to poverty as well as in terms of their levels of poverty and personal inequality has grown.

To further investigate the increasing concentration of the poor in India I identify five states with the highest number of expenditure poor in 1987–88 and follow the progress of these states over time. Data pertaining to the rural sector from the last three quinquennial rounds of 1987–88 (43rd round), 1993–94 (50th round), 1999–2000 (55th round) and 2004 (60th Round) are used. All results (reported in Table 3.16) refer to the rural sectors of these states and the national economy. Also noted (within parentheses) are the shares of the rural sectors of these states in national rural population, reckoned according to the sizes of the NSS sample originating from these states: in 1987–88 UP had 12.81 per cent of the national rural population and 14.99 per cent of the total rural poor.

The single most important conclusions to be drawn from this table is that the shares of the chosen five states in the number of deprived increased steadily over time even though their share of national rural population remained almost constant. The combined share of UP, Bihar, MP, Andhra Pradesh and Maharashtra in the national expenditure-poor figure was 55.47 per cent in 1987–88. This increased to 59.23 per cent in 1993–94, to 61.35 per cent in 1999–2000 and remained almost unchanged at 59.99 per cent in 2004. However, the combined share of these five states in national rural population was almost steady at slightly above 44.6 per cent. Almost half of the MPs elected to the lower House of the Indian Parliament come from these five states.

The increasing concentration of deprivation has created a situation in which the poor are ill placed to take advantage of new opportunities created by economic reforms just as they may suffer less from the loss of old opportunities in sectors that were artificially protected prior to reforms. Thus the poor do not have much stake in the success of the economic reforms program. In a democratic country such as India, this means that political parties espousing pro-reform policies may not necessarily win elections. This could emerge as a significant constraint on rapid economic growth in India.Continuous comparison of poverty figures for India is not possible since there was a change in the methodology for collection of data on consumption in 1999–00 but it is clear that the rate of rural poverty reduction was higher in the 1980s than the 1990s. In terms of rural poverty although 'official' estimates of poverty reduction between 1993–94 and 1999–00 are high (HC in rural areas fell from 37.27 per cent to 27.09 per cent, and the number of poor from 244 million to 193.2 million over the period 1993–99), the balance of evidence with careful adjustments of the 1999–2000 NSS data[5] point to markedly lower reductions. Sen and Himanshu (2004) in a comprehensive and persuasive contribution cast doubts over earlier estimates of poverty reduction. As it turns out, the headcount ratio declined but at most by 3 percentage points and the absolute number of the poor did not decline over 1993–99. Preliminary estimates by Himanshu (2007) indicate that the rural HC declined to 28.7 per cent in 2004–05 (this is comparable to the 1993–94 figure). So over an eleven year period rural HC has declined by about 9 percentage points. Most of that decline (6 points) occurred in the five year period after 1999–00. In contrast the rural HC declined by almost five points in the four-year period 1983 to 1987. In the urban sector the HC fell only by 6.7 percentage points from 32.6 per cent in 1993–94 to 25.9 in 2004–05, partly because of increased migration from rural to urban areas.

Table 3.16: Distribution of the Burden of Deprivation in Rural India

State	*43rd round (1987–88)*		*50th round (1993–94)*		*55th round (1999–2000)*		*60th Round 2004**	
	% of national total of expenditure-poor (% of national population)	*Rank in terms of number deprived 1987–88*	*% of national total of expenditure-poor (% of national population)*	*Rank in terms of number deprived 1993–94*	*% of national total of expenditure-poor (% of national population)*	*Rank in terms of number deprived 1999–2000*	*% of national total of expenditure-poor (% of national population)*	*Rank in terms of number deprived 2004*
UP	14.99 (12.81)	1	15.28 (13.1)	2	15.2 (13.4)	2	17.3 (14.4)	1
Bihar	13.25 (9.63)	2	17.35 (10.1)	1	18.51 (10.5)	1	15.6 (9.0)	2
MP	11.23 (7.83)	3	11.36 (7.83)	3	13.46 (7.4)	3	11.7 (7.3)	3
Andhra Pradesh	8.14 (7.43)	4	7.08 (7.11)	6	8.14 (7.47)	5	9.5 (7.4)	4
Maharashtra	7.86 (7.03)	5	8.16 (6.5)	5	6.02 (5.91)	7	5.8 (7.7)	6
Total of the five states	55.47 (44.73)		59.23 (44.64)		61.35 (44.66)		59.9 (45.8)	

Notes: * To make the data comparable across rounds UP and Uttarakhand, Bihar and Jharkhand, and MP and Chattisgargh were each lumped together. The new states of Uttarakhand, Jharkhand and Chattisgarh were formed by splitting UP, Bihar and MP, respectively, in 2000.

Source: Jha, Gaiha and Sharma (2006) and Author's calculations based on National Sample Survey Data.

Rising Unemployment

An additional emerging constraint on rapid economic growth in India is the inability — at least so far — of the reforms to generate a sufficient number of jobs, particularly in the face of an upsurge in the participation rate following the rise in the share of the young in the population. India has long had problems with unemployment and underemployment. However, economic growth in the pre-reform period did impact on unemployment by raising the demand for labour. The employment elasticity of output growth was high but employment growth has been relatively sluggish even in the face of buoyant output growth (Table 3.17).

The NREGA will provide at best only 100 days of employment per household for the 200 poorest rural districts at the minimum wage which is, at best, a band-aid solution for those most in need and cannot be construed as a secular increase in the demand for labour which, alone, can make a serious dent on the scourge of rising unemployment in India. CAG (2007) has reported only mediocre progress of the NREG program.

In addition to open unemployment there also exists India's persistent problem of underemployment. Underemployment in various segments of the labour force is quite high. The estimates of the 50th Round of the NSS indicate that although open unemployment was only 2 per cent in 1993–94 on US basis, the incidence of under-employment and unemployment taken together was as much as 10 per cent that year. This occurred despite the fact that the incidence of underemployment was reduced substantially in the decade ending 1993–94. The higher unemployment creates a political climate in which policy measures such as increased liberalisation of international trade become increasingly difficult to take since such policies may be construed to involve short-term increases in unemployment or, at the least, increase the perceived uncertainty of tenure of employment.

Table 3.17: Unemployment in India, Current Daily Status Basis (percentages)

<table>
<tr><td></td><td colspan="2">1993–94</td><td colspan="2">1999–00</td><td colspan="2">2004</td></tr>
<tr><td></td><td>Rural</td><td>Urban</td><td>Rural</td><td>Urban</td><td>Rural</td><td>Urban</td></tr>
<tr><td>Male</td><td>5.6</td><td>6.7</td><td rowspan="2">7.21</td><td rowspan="2">7.65</td><td>9.0</td><td>8.1</td></tr>
<tr><td>Female</td><td>5.6</td><td>10.5</td><td>9.3</td><td>11.7</td></tr>
</table>

Source: Economic Survey, Government of India, 2006–07.

High Fiscal Deficit

India's fiscal deficit woes have been well documented (see, for instance, Jha et al. 2003). The combined fiscal deficit of the central and state governments has been hovering near 10 per cent of GDP for quite some time now but has come down in the recent past. This figure was 9.6 per cent in 2002–03, 8.5 per cent in 2003–04, 8.4 per cent in 2004–05 and is estimated to be 7.5 per cent in 2005–06. Although there is a distinct improvement in the fiscal deficit scenario the public debt of India has been climbing steadily. There has been a change in the composition of this debt, however, with the share of external debt falling and that of internal debt rising.

This persistently high fiscal deficit has had deleterious effects has reduced the amount of resources available for investment by lowering public saving (Saggar, 2003). Since 1998–99 the public sector has been dissaving continuously. Furthermore, some of the

savings–investment gap spills over onto the external balance. In addition, persistent pre-occupation with controlling the fiscal deficit reduces the flexibility to conduct countercyclical fiscal policy.

Budgetary deficits — directly measured — are only part of the fiscal burden of the state in India. It is well-known that contingent liabilities of the government are very large. In the past the government has had to bail out insolvent banks and other financial institutions (the latest being the Unit Trust of India) at severe cost (Sharma, 2004).

Problems of Infrastructure

India's record in providing high quality, reliable and reasonably priced infrastructural services to its households and businesses has been inadequate and there is no immediate respite in sight. Even though the potential of the private sector to meet India's pressing infrastructure needs is largely untapped, and hence can be expanded considerably, there will continue to be a major role for the public sector in providing infrastructural services, particularly in the less developed regions/states of India. India's infrastructure requirements have been put by one estimate at US$215 billion in the 2001 to 2006 period.[7]

However, before such investment can take place, the paucity of infrastructural facilities hampers rapid economic growth. Jha and Thapa (2003) document that states with poor infrastructure have poor records of poverty reduction.

The upshot of these arguments is that there are important constraints to rapid economic growth in India. Whereas high levels of the fiscal deficit and public debt reduce resources available for investment, poor infrastructure facilities reinforce the tendency toward increasing concentration of poverty. The fact that some of the poorest regions in the country have poor economic reform and governance records as well as some of the highest population densities and thus have high representation in Parliament indicates that reform measures that do not appear to be beneficial in the short run have little political support. The fact that unemployment has actually increased during the period 1993–94 to 2004 is further indication of the lack of popular support for rapid liberalisation and reform.

3.6 Prospects for Alleviating the Constraints on Rapid Economic Growth

That rapid economic liberalisation of the form that took place in China beginning in the late 1970s is difficult to achieve in India is now clear. In a democratic society tolerance for rapidly increasing inequality and slow realisation of gains of liberalisation for the poor is low. For instance, India will not be able to countenance the vast regional inequality that has emerged in China between the coastal areas and the interior. Hence, relieving the constraints on building consensus for rapid liberalisation is an essential part of the strategy to sustain rapid economic growth in India.

How likely is this? Although there exists room for reorienting subsidies it is difficult to see how their total magnitude can be reduced significantly. Some expenditures are highly inflexible and three such items (interest payments, defence expenditure and subsidies) make up almost 100 per cent of tax revenues. India's expenditure/GDP ratio is not much out of line for developing countries and is substantially below that of OECD countries.

There is much to be gained from tax reform and substantial opportunity exists for raising the tax/GDP ratio which has been stagnant for some time now and is substantially

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[7] Estimates by the Expert Group on the Commercialization of Infrastructure Projects reported in NCAER (1996).

below that of OECD and even some developing countries. The contours of a tax reform program to raise the tax/GDP ratio would include expanding the tax net by removing exemptions and taxing services as well as agricultural income, consolidating and rationalising indirect taxes into a value added tax and improving tax administration.

Such tax reform and lowering the fiscal deficit becomes even more necessary because of the extent of contingent liabilities of the government. These include but are not confined to the non-performing assets of banks.

Taking efforts to increase the employment elasticity of income growth is another important challenge. Rapid rise in agricultural employment must await substantial investment — particularly in agricultural infrastructure. Employment growth in the services sector has been impressive but the capacity of this sector to absorb labour is limited. For purposes of employment expansion India will have to rediscover its latent comparative advantage in low value added manufacturing. This has been the area of most rapid growth in China and several Southeast Asian countries. India did not enter this club and imposed high tariffs on these products while at the same time producing these product domestically in ‘small scale industries’, many of which were granted reservations for producing specific goods. The result has been high cost production which is non-competitive both in the domestic and international markets.

A more enlightened policy would be to remove the reservations for the small scale industrial sectors as well as reducing tariffs. Labour market regulations should be made more flexible. After decades of high GDP growth China and southeast Asia have moved up the value chain in manufacturing production and India could well occupy the vacated low value added manufacturing space. Indeed India could become one of the most important production centres in these areas. This also has the potential to create large increases in employment.

Improvements in policy towards infrastructure have been suggested in a number of documents (see for example, India Infrastructure Report 2002, World Bank 2004). India is slowly moving in the direction of introducing competitive markets in infrastructure, with private sector production under modern regulatory structures. Some progress has been made in telecom, roads, ports, electricity and aviation. But progress has been faltering and much remains to be done. Also, a number of states have reverted to the practice of providing free electricity to farmers. Thus progress on this front has been slow and there have been some retrograde steps as well.

The one area in which considerable progress can be expected is telecom. Mobile telephone and associated technology has grown rapidly in India. India has in excess of 50 million mobile phones with a rate of growth of 2 million phones a month. Internet access has improved considerably and there are plans to bridge the rural-urban divide in internet connectivity by rapid expansion of services in rural areas.

Some progress has also been achieved in the areas of roads. There is a substantial project to build new highways — including the so-called ‘golden quadrilateral’ to connect the four major cities of New Delhi, Mumbai, Kolkata and Chennai with six lane expressways and supplementary feeder routes.

The functioning of ports has also recorded some improvements — partly as a result of contracting out the operations of ports to international firms with specialised expertise on this subject. According to Kelkar (2004) the turnaround time at ports dropped by half, from 7.5 days in 1996–97 to 3.5 days in 2001–02. In 2004–05 Indian ports handled cargo of 510 million tonnes, an increase of 10.8 per cent over 2003–04. India is seeking to double port capacity in the near term and has also embarked on an ambitious program to develop feeder roads to port facilities. Airport privatisation is back on the agenda after a certain delay.

Thus the prospects for effective alleviation of the constraints facing higher economic growth are mixed but, on balance, they appear positive. However, India must continue to adopt a forward looking economic reforms program to work around some of these constraints and ensure high and stable growth can be put in place.

3.7 Conclusions

After two decades of economic reforms the Indian economy is at a crossroads. The reforms program has yielded considerable returns in the form of higher and more stable growth as well as considerable modernisation of the economy. After more than two decades of impressive economic growth and some important reforms as well as deregulation, the Indian economy is at the threshold of even higher growth.

But, unforeseen and stubborn challenges have been thrown up especially in the areas of the high fiscal deficit and financial sector weakness, increasing regional and personal inequality, low elasticity of employment with respect to growth and inadequate infrastructure. Several of these, for example, inadequate decline in poverty are such that they can be addressed best by high and sustained economic growth. Thus the relation between economic growth and economic reforms is non-linear. The Indian economy needs to undergo further economic reforms in order to fully realise its potential of economic growth. But, there might be short-term constraints on economic reforms especially when they play themselves out through the democratic process. This is an important challenge for policymaking in India.

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PART II

EMERGING ISSUES IN FISCAL POLICY IN INDIA

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4

A Decade of World Bank Sub-National Policy-Based Lending to India: A Retrospective

Stephen Howes, Deepak Mishra & VJ Ravishankar[*]

4.1 Introduction

About 30 per cent of World Bank lending is provided to support policy reforms. The utility of this form of lending has been much contested. Econometric analysis (such as Dollar and Svensson, 2000) has cast serious doubt on the capacity of Bank loans to influence policy outcomes. To gain a more nuanced understanding of policy-based lending, the literature has turned to case-studies, such as the series of African cases (Devarajan et al., 2001).

While most policy-based lending (PBL) supports central government policy reforms, a growing proportion backs reforms at the state or provincial level through sub-national policy-based lending (S-PBL). This was the approach taken in India. Over the ten-year period of 1996–97 to 2006-07, there have been 9 policy-based loans from the World Bank to 4 Indian states for USD 2.1 billion.

This chapter tells the story of policy-based lending by the World Bank to the states of India over the last decade — the context that led to its creation, its impact on the ground and lessons learnt from its operation. It is a fascinating story, with successes, failures, and several near-misses and mid-course corrections. It is one of the largest policy-based lending experiences in the world, and certainly the largest at the sub-national level. It is revealing in what it teaches about the political economy of reform at the state-level in India and equally instructive in the context of the ongoing debate over the effectiveness of policy-based lending. And it is a story still to be told, though Kirk (2005, 2007) provides parts of the narrative from the perspective of a political scientist.

Since the authors of this chapter have all been involved in the prosecution of sub-national policy-based lending in India, we cannot claim that this is an independent evaluation. It is, however, one based on a detailed knowledge of the unfolding of the S-PBL story over the last decade.

The chapter is structured as follows. The first half (Sections 4.2 to 4.4) sets out the historical record. Section 4.2 outlines the role of the states in India's federation, and the emergence and subsequent easing of the state-level fiscal crisis of the late 1990s. Section 4.3 outlines the increasing emphasis given by the World Bank to state reforms. Both of these trends underlay the emergence of S-PBL as a critical Bank instrument in India over the last decade. Section 4.4 then provides a brief summary of the different experiences of the states which engaged in policy-based borrowing.

[*] The views expressed here are those of the authors, and not of the institutions they work for.

The second half of the chapter turns to analysis. It is structured around four different topics, presented below along with summaries of our conclusions.

1. *Learning from success: did sub-national policy lending work*? Section 4.5 asks what the evidence is that S-PBL has had a positive impact on state reforms. It is impossible to give a rigorous answer. Performance against fiscal targets was largely on-track. While non-PBL states also have achieved some fiscal adjustment, overall PBL states adjusted faster and further than non-PBL ones. We attribute this largely to the effective screening put in place which avoided the adverse selection problem often associated with policy-based lending, but also to the combination of lending, dialogue and monitoring which helped place reform higher on the political and bureaucratic agenda than it would have been otherwise. S-PBL states also recorded a number of important reforms in other areas. Most importantly, but harder to prove, S-PBL was an important part of the Bank's 'focus state' strategy which succeeded in its aim of creating a demonstration effect across India's states to build support for reforms.

2. *Learning from failure: sub-national policy based lending and the power sector.* Section 4.6 examines one area where S-PBL was only partially successful, and in some respects a complete failure, namely the power sector. Considerable learning in India went on during the last decade in relation to power sector reform. This required reconsideration of whether power reforms which had been propounded vigorously, and turned into conditions, in fact made sense. Distribution privatization came to be viewed as less attractive than improving efficiency in the public sector, and moving away from free power to agriculture in all but a tokenistic way came to be seen as politically impossible. The lack of success on these key power sector reforms demonstrates clearly the limitations of PBL in terms of leverage. It also teaches that any PBL program, even when undertaken in good faith on both sides, will involve considerable uncertainty, learning and, therefore, mistakes, often important ones. Disengaging from those mistakes will require difficult trade-offs between credibility and flexibility.

3. *Learning from commonality: sub-national policy-based lending in a federation.* Policy-based lending has been used at the sub-national level in several countries now, including Pakistan, Mexico, Argentina and Brazil, but nowhere more than in India. The Indian experience confirms that S-PBL can be a useful tool for helping the central government impose fiscal discipline and promote reform among sub-national governments. Indeed, it may be easier to be selective and avoid adverse selection problems at the sub-national than the national level. However, the Indian experience also points to various potential risks, including that S-PBL could actually undermine fiscal discipline. This was averted in India by including sub-national lending in global borrowing limits, and over time restricting its use to debt-swaps. The discretion which is embedded in the PBL approach can undermine a rules-based approach to federalism: this suggests that PBL conditions will differ much less across states than countries. S-PBL can also be seen as discriminating against poorer or lagging states, yet Indian and global experience both suggest that PBL lending to lagging states will increase risk. Finally, the decision about whether to engage with states individually (retail) or through a central government scheme (wholesale) is a political one, and the right response will vary from country to country. In India, given political realities, linking Bank policy-based lending to the central government fiscal reform scheme, but not integrating the two, made the most sense.

4. *Learning from diversity: determinants of sub-national policy based lending success.* This section asks why some states did so much better at accessing sub-national policy-based loans than others. Political-economy factors emerge as the main determinant of S-PBL success, largely through the influence of state-level politics on state-level reform prospects.

Finally, a note on our use of the term ‘policy-based lending’ which we define to mean lending based on an agreed overall (not purely sectoral) policy framework. The policy-based lending literature (which we review briefly in section 4.5) is focused on adjustment lending (lending which is quick-disbursing and not earmarked for any particular sector), since this is overwhelmingly the modality used for policy-based lending, and the two terms are often used synonymously. Since in India the first S-PBL was in fact not an adjustment but an investment operation[1] (that is, with disbursements over several years and earmarked for various sectors) we use this more general definition of policy-based lending to refer to lending based an on agreed overall policy framework.

4.2 State Reforms and the Fiscal Crisis[2]

States in India play an important role in devising and implementing economic and development policies. Under the Indian Constitution, state governments are assigned significant responsibilities in sectors such as agriculture, industry, infrastructure, education, health and social welfare. India’s state governments are key financiers of a number of areas critical for enhancing growth and reducing poverty. In 2000, 57 per cent of India’s total government capital expenditure was financed by the states, as was 97 per cent of irrigation maintenance, 39 per cent of road maintenance, 90 per cent of public health expenditure, and 86 per cent of public education expenditure. In fact, India’s states are responsible for a higher proportion of general government spending than in any other developing country, except China.

One of the striking features of Indian states prior to the 1990s was the relative uniformity of policies across states. State-level policies were mostly decided by the central government (the ‘centre’, for short). Two events changed this: first, the big push starting in 1991 to liberalize the trade and investment regime led to increased competition between states to attract business and investment; second, the 1990s witnessed an acceleration in the decline of the once nationally-dominant Congress Party and the emergence of regional political parties.

State reforms were also catalyzed by the state-level fiscal crisis of the late 1990s. A slow secular deterioration in fiscal performance over the 1980s and 1990s was catalyzed into a state-level fiscal crisis by the Fifth Central Pay Commission pay awards in the late 1990s. State revenues declined over the 1990s from about 12 per cent of GDP to 10 per cent of GDP. An increase of nearly 30 per cent in real wages for state civil servants beginning in 1997 led to a sharp deterioration in state-level fiscal performance in the late 1990s — deficits rose, the state-level debt stock, which had been declining, started rising

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1 Broadly speaking, World Bank lending comes in two forms: investment lending and adjustment (also called development policy or budget support) lending. A typical investment loan has 5–7 year duration, and it finances goods, works, and services in support of economic and social development sectoral projects. On the other hand, an adjustment loan has a relatively shorter duration (1 to 3 years), and it provides quick-disbursing financing to support policy and institutional reforms. Over the past two decades, adjustment loans have accounted for about 30 per cent of total Bank lending. Though adjustment lending was re-labelled development policy lending by the Bank in 2004, we stick with the earlier terminology throughout to avoid confusion.

2 This report draws on and updates World Bank (2005).

rapidly, and off-budget liabilities also grew quickly. There was also a liquidity crunch among state governments, who started finding it difficult to pay bills, and even salaries. *India Today* in its 14 February 2000 issue titled its cover story 'States Going Broke: Bankruptcy Stalking a Collapse of Public Services'.

There is a close parallel with the balance of payments crisis of 1991 in terms of impact: just as that national crisis gave rise to a decade of central government reforms, so the state-level fiscal crisis gave enormous impetus to reforms at the state level.

The central government also started taking state reforms more seriously, in particular state fiscal reforms. The weak coalition that ruled India during 1996–99 limited the centre's capacity to influence state level policy. The central government encouraged the World Bank to engage in policy dialogue at the state level. In 2000, India's Eleventh Finance Commission, which had the task of formulating the rules by which central revenues would be distributed to state governments for the period 2000–05, was asked by the Government of India to 'draw a monitorable fiscal reform programme' and link part of the Commission's grants to progress under this programme. The result was the Fiscal Reform Facility, a fund of Rs 10,000 crore (about $2.2 billion), which was made available to states during 2000–05 to reward improvements in their fiscal position. The Twelfth Finance Commission, for the period 2005–10, included provision for much more extensive fiscal-performance-linked grants and debt relief, now being implemented through a large Debt Consolidation and Relief Facility.

Looking back, much has been achieved. Nearly all state governments speak the language of reform, including the ones governed by the Communist Parties. Some reforming governments have been re-elected. Most have been defeated (most governments in India are one-term), but opposition parties, once elected, have often taken over the mantle of reform. The state fiscal position is much improved relative to the late nineties. As Figure 4.1 shows, at the aggregate level state fiscal performance started to improve in 2004–05. In 1998–99, the combined state fiscal deficit jumped from under 3 per cent of GDP to over 4 per cent and it stayed between 4 and 5 per cent of GDP till 2003–04. In 2004–05, it fell to 3.5 per cent and in 2005–06 to 3.2 per cent. In 2006–07, the combined state fiscal deficit is budgeted to fall to under 3 per cent, and the primary and current deficits are budgeted to be virtually eliminated compared to their 2–3 per cent level since the late nineties. State debt has started to decline after an inexorable climb since the mid-nineties.[3]

This fiscal correction has come about primarily through revenue enhancement, with revenue receipts increasing from 10.9 per cent of GDP (the average for 1995–2000) to 12.9 per cent of GDP in 2005/06.[4] Central transfers have increased by 1.2 per cent of GDP over this period, and the states' own revenues by 0.8 per cent of GDP. State revenues have increased rapidly due to: a significant growth acceleration; the Twelfth Finance Commission which significantly increased funding for the poorer states; central tax reforms, which improved central tax buoyancy; and a number of state reforms, most notably the introduction of a state-level VAT in 2005. The effect of the one-time increase in wages due to the Fifth Pay Commission also withered over time and, with real wage restraint and restrictive hiring policies, the wage bill fell from a high of 4.5 per cent of GDP in 1999/00 to 3.2 per cent of GDP in 2005/06.[5]

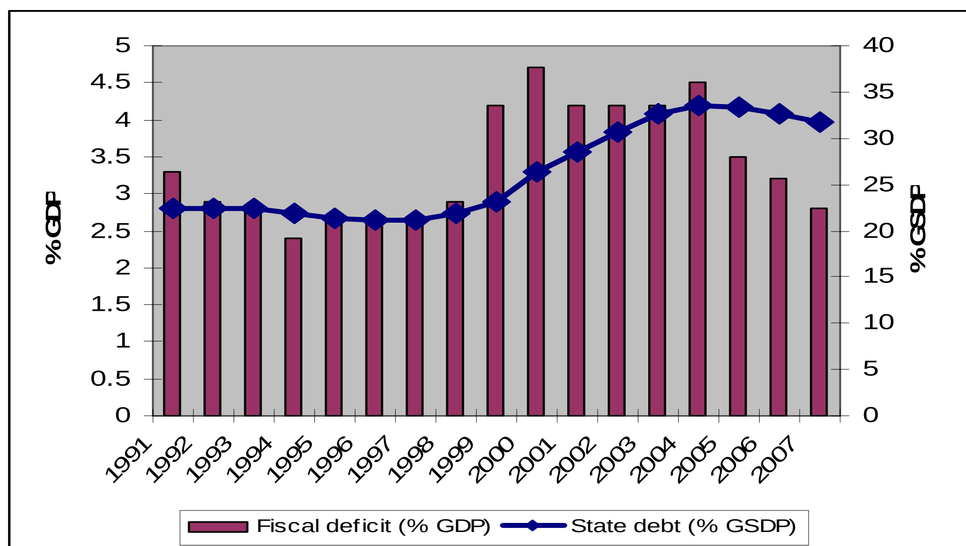
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[3] The central fiscal deficit has also come down from 6.2 per cent of GDP in 2001/02 to an estimated 4.1 per cent in 2005/06.

[4] RBI (2006) Table 6, p. 18

[5] RBI (2006) Table 9, p. 22

Figure 4.1: State Deficit and Debt, 1991–2007



Source: RBI (2006).

Notes: 1991 is the fiscal year 1 April 1990 to 31 March 1991 for the fiscal deficit and is 31 March 1991 for the state debt. 2006 are revised estimates, and 2007 budget estimates.

4.3 The World Bank and State Reforms

This section traces the shift by the World Bank over the course of the 1990s towards promoting state reforms, and locates the rise of S-PBL within this broader trend. A start was made with the 1995 Country Assistance Strategy (CAS) for India. Whereas the previous two CASs (1992 and 1994) had focused on supporting central government reforms, this CAS argued the case for more attention on state-level sectoral and fiscal reforms. The shift was a modest one, especially by what was to come in the later years. The Bank proposed to undertake more state fiscal and sectoral analysis, and to pay greater attention to the financial sustainability of Bank lending (much of which was to the states).

The real change came with the December 1997 CAS. This led off, as the first of a five-prong strategy, with a ‘focus on reforming states’:

> As the focus of the reforms has shifted to the states over the past few years, the Bank Group’s assistance strategy is itself being reoriented to focus mainly on those states that have chosen to embark on a comprehensive program of economic reforms. (p. 9)

From now on, Bank programs in reforming states would be based on a common understanding not only in sectors the Bank might be supporting, but on the ‘general policy framework’ in the state. The share of Bank lending going to support central rather than state programs was proposed to plummet from 61 to 27 per cent.

Kirk (2007, p. 291) argues that the shift to the states was a response to the Bank’s ‘long-standing frustration at its limited policy influence in the country.’ The shift to the states made good sense given the developments outlined in the previous section. There were four main arguments for the concentration of Bank effort in a few rather than many

states. First, it would have a demonstration effect: signaling to other states to the importance of reform, both for its own sake, and to attract Bank financing; and supporting reforms in a few states which, once proved, could be rolled out to others. Second, in a vibrant democracy such as India it made more sense to support willing reformers than to try to cajole unwilling laggards. Third, it was a form of selectivity: a way to focus efforts in such a large country. Fourth, along the lines of the arguments then being developed in the Bank that aid was most effective when used in a good policy environment (Burnside and Dollar, 2000), it would ensure more effective use of Bank funds.

There were three immediate, public manifestations of this shift. First, in 1997, the Bank halted preparation of a rural water supply project in Punjab in response to the announcement that the government of that state was introducing free power and irrigation water for farmers. These totemic populist measures did not directly impact on rural drinking water, but the Bank's refusal to go further with the project was a clear demonstration of its willingness to take into account the 'general policy framework' when making lending decisions to states. Second, the West Bengal Government refused to have undertaken, or to undertake itself, a fiscal analysis of the type completed for several other states. As a result, in 1999, three projects under preparation in that state were shelved (Mookerju, 1999). Again, the same signal was being sent.

Third, the Government of Andhra Pradesh (AP) was selected by the Bank as its initial focus state. Famously, the Chief Minister of AP, Chandrababu Naidu, the pioneer among state reformers, sought a last-minute appointment in Delhi with the visiting World Bank President Wolfensohn, whose visit to India included several states but not AP (Naidu, 2000). Under Naidu, AP became one of the first states to promote reform and fiscal adjustment, and the first to reach out to the World Bank for assistance in this endeavour. The culmination of the Bank–Andhra partnership was the Bank's first S-PBL to India: the Andhra Pradesh Economic Restructuring Project (APERP), a massive multi-sectoral project, underpinned by an agreed multi-year fiscal framework, with a total loan/credit value of $540 million, was approved in May 1998. AP also benefited from a number of other investment projects. In 2000, the Bank reported that it had committed $1.5 billion to the state.

The 'focus state' strategy, as it was called, continued to be rolled out. It was endorsed by an independent evaluation of the World Bank program in India (OED, 2001), and re-endorsed by the 2001 CAS (World Bank, 2001). This listed three focus states: UP and Karnataka, alongside AP. The major change in the 2001 CAS relative to 1997 was the official endorsement of adjustment lending as a key instrument to pursue the focus state strategy. When AP was selected as the first focus state, S-PBL had just emerged worldwide in the Bank, with the first loan to an Argentine province in 1996. AP's experience had already confirmed the global finding that adjustment lending was a better and more flexible instrument for policy-based lending than investment lending, and in 1999, S-PBL was agreed to as an instrument by the Government of India. World Bank S-PBL commenced in India in March 2000 with a $250 million loan/credit to the state of Uttar Pradesh.

The 2001 CAS gave great emphasis to the importance of S-PBL. If things went well (if the 'high case scenario' held), adjustment lending would as much as $500–900 million a year — one-sixth to almost one-third of an envisaged best-case total annual lending of $3 billion to India.

The focus state strategy remained in place during the 2001 CAS period. Adjustment lending never took off to the extent envisaged, but there was a steady flow of about one adjustment loan a year, or around $150 million a year. UP's reforms, especially in the power sector, faltered in a context of political instability and frequent leadership

changes, and the state's partnership with the Bank weakened. Tamil Nadu (TN) joined AP and Karnataka as focus states. A very significant commitment of resources, covering both adjustment and investment lending, was made to these states. A newspaper headline from February 2000 read '*Karnataka set to clinch Rs 10,000 crore [$2.2 billion] World Bank deal'.*[6] Even allowing for journalistic exaggeration, these were significant sums, designed to catch the attention of state politicians, both those receiving the funds and those missing out.

The fact that by 2001 the Bank had three southern states as its main focus states epitomized as much as anything else the problems which the focus state strategy had given rise to. While these states (with the exception perhaps of TN) were poor ones, they were all considered to have good growth prospects: to be leading rather than lagging. This concern — that a focus on reforming or performing states would mean a neglect of lagging states — had been raised from the time the focus state strategy was first enunciated.[7] The 1997 CAS had straightforwardly noted that lending would end 'in states where commitment to reform does not exist. These may include some of the poorest states in the country.' (p.iii). The adoption of Uttar Pradesh as a focus state had helped to mitigate this criticism and the 2001 CAS included a commitment to give preferential treatment to poorer, reforming states. This was not seen to have delivered sufficient results, however. With the growing concern that poorer states were being overlooked, the 2004 CAS (World Bank, 2004) proposed a change in tack:

> Though the Bank Group strategy will retain an essentially reform and performance based approach to the states, it will also change in ways that are intended to go as far as possible in opening up new engagements with these largest and poorest states.

The 2004 CAS proposed two main new ways to give more emphasis to poor states. First, to dedicate greater resources to engagement with them, and to provide technical assistance. Regardless of performance, more resources for these activities were promised for the four poorest states of Bihar, Jharkhand, Orissa and Uttar Pradesh. Second, a greater spread of resources was promised for states that could develop reform plans or meet good practice guidelines for at least the sector concerned. No longer would decisions on investment projects take into account the 'general policy framework' of the state; rather proposals from all states would be considered on their own merits.

The corollary of this move away from a focus state approach was the much greater importance given to adjustment lending as a vehicle for engaging with reforming states. S-PBL would not only continue (though a more realistic target of 15 per cent of total lending was set), but, rather than being combined with a package of sectoral investment loans, it would now be the sole instrument for supporting a state's overall reform program.

The rapid rise in importance given over this period to S-PBL in general and state-level adjustment lending in particular is evident. We turn now to examine the results of this experiment.

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6 *Business Standard*, 2 February 2000.

7 It was often referred to as the 'What about Bihar?' question, with Bihar being India's poorest and in the opinion of many worst-governed state.

4.4 State Experiences with Policy-Based Lending

As Table 4.1 shows, in the decade from 1997–08 to 2006–07, there have been 9 S-PBLs from the World Bank to various Indian states:[8] the AP Economic Restructuring Project, a $540 million multisectoral investment loan; and eight subsequent adjustment loans totaling $1.5 billion. The adjustment operations have all but the last two been one-tranche operations based on upfront actions: that is, the loans have been immediately and fully disbursed to the state upon approval, which in turn has been based on the completion of a number of pre-identified reform actions. This pattern of a series of one-tranche operations is now the most common worldwide in Bank adjustment lending, and is often referred to as programmatic adjustment lending. Consequent on new guidelines issued by the Government of India in October 2005, the last two operations (the third to AP, and the second to Orissa) are two-tranche operations, with some portion of the loan value conditional on a second set of milestones being met.

Loans for India's states are disbursed from the Bank to the Government of India. The latter then converts the amount into local currency and passes it on to the state concerned. The adjustment loans have typically been a 50–50 or 67:33 blend of IBRD loans and IDA credits, so one part (IBRD) is passed to the Government of India as a commercial loan, the other part (IDA) as an interest-free loan.[9] Until 2005, this amount was transferred from GoI to the states as a 70 per cent loan and 30 per cent grant. Following the recommendations of the Twelfth Finance Commission, the on-lending terms were changed to be 'back-to-back' with Bank terms, with the foreign exchange risk to be borne by the borrowing state governments.

The scope of the reform programs being supported by S-PBL has varied over time and across states. Over time, the scope of the programs has grown as Table 4.1 shows. The early operations were focused mainly on fiscal reforms, in particular on establishing and adhering to a multi-year fiscal framework. This was a natural focus given the states' fiscal crisis in the late 1990s. Subsequent operations, especially to the same state, had an expanded scope which included structural reforms to improve the investment climate and accelerate economic growth, and in some cases, governance reforms to improve public service delivery.

From the first, the Bank S-PBLs also addressed, apart from the need for fiscal adjustment, public expenditure management reform to promote expenditure efficiency and restructuring of public enterprise reform, including privatization. Subsequent operations, starting with UP in 2000, retained these three focus areas, often went into them in greater depth (for example, starting with the UP operation, financial accountability became a much more important part of the public expenditure management agenda), and added others. The UP operation was the first to tackle cross-cutting governance issues, such as civil service reform and measures to combat corruption, and to add an explicit focus on poverty: the focus in UP and many of the later operations was on improving monitoring, but some later operations added to this an

[8] Other donors including Asian Development Bank (ADB) and the UK Department for International Development (DfID) have also been involved in S-PBL in India, though on a smaller scale than the World Bank. The ADB has lent to four states (Gujurat, Madhya Pradesh, Kerala and Assam), but typically on the basis of only one operation per state. DfID has cofinanced Bank and ADB policy-based operations in AP, MP and Orissa, but no longer does so. The discussion here is limited to the World Bank operations only. There have also been two S-PBLs by the Bank since the first decade finished, both in late-calender 2007, one to Bihar and one to Himachel Pradesh. These are not analyzed here, partly for the pragmatic reason that they were both approved after the first draft of this paper, and partly because they were both first loans to new states, and it is too early to assess their impact.

[9] The last two loans have been a 70–30 IBRD–IDA blend.

emphasis on improving social safety nets. The Karnataka operation in 2002 also included a focus on investment climate reform: measures to make it easier to set up and run a business. The second AP adjustment loan in early 2004 added three specific sectoral foci: power, health and education. Loans undertaken since then have basically had the same extensive coverage as this second AP operation.

Table 4.1: Basic Information on Policy-Based Lending to Indian States by the World Bank

No.	*FY*	*Date*	*State*	*Name*	*Modality*	*Amount*	*Policy reform content of the operation*	*No. of triggers*
1	1997–98	May 1998	AP	APERP	Investment	$540m	Fiscal, PEM, PE	11
2	1999–00	Mar 2000	UP	UP Fiscal Reform and Public Sector Restructuring	Adjustment	$250m	Fiscal, PEM, PE, governance, poverty	37
3	2000–01	May 2001	Karnataka	Karnataka Economic Restructuring	Adjustment	$150m	Fiscal, PEM, PE, governance, poverty, IC.	12
4	2001–02	Feb 2002	Karnataka	Second Karnataka Economic Restructuring	Adjustment	$100m	Fiscal, PEM, PE, governance, poverty, IC	12
5	2001–02	Feb 2002	AP	AP Economic Reform	Adjustment	$250m	Fiscal, PEM, PE, governance, poverty,	14
6	2003–04	Feb 2004	AP	Second AP Economic Reform	Adjustment	$220m	Fiscal, PEM, PE, governance, poverty, IC, power, health, education,	14
*	2003–04	Mar 2004 (withdrawn from Board)	Tamil Nadu	Tamil Nadu Economic Restructuring	Adjustment	$250m	Fiscal, PEM, PE, governance, poverty, C, power, reform management	15
7	2004–05	Nov2004	Orissa	Orissa Socio-Economic Development Program	Adjustment	$125m	Fiscal, PEM, PE, governance, poverty, IC, power, health, education,	10
8	2006–07	Aug 2006	Orissa	Second Orissa Socio-Economic Development Program	Adjustment	$225m	Fiscal, PEM, PE, governance, poverty, IC, power, health, education,	11 in first tranche and 2 in second
9	2006–07	Jan 2007	AP	Third AP Economic Reform	Adjustment	$225m	Fiscal, PEM, PE, governance, poverty, IC, power, health, education,	7 in first tranche and 3 in second

Notes: * This loan to Tamil Nadu was prepared and negotiated but not approved. See the text for more detail.

1. The fiscal year is the Bank one, from July to June.
2. An investment loan is a loan whose proceeds are disbursed over a number of years, and earmarked for particular projects or expenditures; an adjustment (or development-policy or budget support) loan is one which is disbursed in a small number of tranches (often only one) and whose proceeds are not earmarked for any particular use.
3. Policy reform content of operation based on policy matrices associated with each of the adjustment operations, and with the non-sectoral loan conditions for the first AP investment operation. PEM stands for public expenditure management, PE for public (state-owned) enterprise, IC for investment climate (industrial or agricultural deregulation), poverty for poverty monitoring and safety net reforms. The way the policy content is presented in this matrix does not necessarily reflect the way it is presented in the various policy matrices, since terminology has been adjusted in some cases to ensure comparability across the operations.
4. Triggers are the prior actions specified as pre-requisites for the processing of the operation. Since APERP is not an adjustment loan, triggers are calculated as the number of assurances related to the area of fiscal policy (10) plus one for public enterprise reforms (the six separate assurances in this area are aggregated into one).

Source: Author's computations

This consistent expansion of the reform program could be criticized as mission creep, and vulnerable to the standard criticism of adjustment lending that it is too often over-ambitious and lacking in selectivity. However, an attempt to retain selectivity and focus was made by reliance on a small number of triggers: actions selected from the larger policy matrix and specified as pre-requisites or 'upfront actions' for the operation. As Table 4.1 shows, if anything, the number of triggers has been on a downward trend.[10] The expanding agenda can also be positively interpreted as a response to the improving fiscal position, and the need to move the reform agenda forward. In the midst of a fiscal crisis, fiscal stabilization had to receive top priority; as measures were put in place to deal with this, it made sense to turn to other constraints to development.

Within and across these broad thematic areas, loans were tailored to the specific circumstances and interest of the different states. The Bank encouraged but did not enforce other states to adopt reforms adopted in one. Privatization and restructuring of state owned enterprises featured in all operations, but were much more important in AP and Orissa than in Karnataka or Tamil Nadu.

The remainder of this section tells the story by state, in order of the states' receipt of their first loan. The focus on this section is on the political context within which the loans were made, and on the factors which allowed or inhibited movement from one lending operation to another.

Andhra Pradesh

AP's fiscal position deteriorated sharply over the mid-1990s. The state government supplied highly subsidized rice through the public distribution system, and placed a prohibition on liquor consumption, which deprived the state of an important source of revenue. The new government which came to power in 1995 led by Chandrababu Naidu decided to reverse both these policies, and sought Bank support for its reform program driven by an ambitious vision of taking AP to the level of development of East Asian countries by the year 2020.

The Andhra Pradesh Economic Restructuring Project (APERP), approved in 1998, was a large multi-sector investment loan predicated on a medium-term fiscal framework. APERP got off to a bad start. Although the fiscal situation had improved during 1996 to 1998, prior to loan approval, this could not be sustained in the run-up to the 1999 elections, and the state's fiscal indicators went badly off-track, missing the agreed targets by a considerable amount. Naidu was re-elected in 1999: though the margin of victory was small, the result gave an enormous boost to state-level reform prospects around the country. APERP continued to disburse, and finally closed in 2007. Its fiscal framework was superseded by those adopted in subsequent adjustment operations. Clearly, a more flexible framework was needed to support reforms. Once sub-national adjustment lending became available for use in India, AP was a natural candidate, and in February 2002, almost three years on from APERP, the state became the third to receive an adjustment loan from the Bank. A new fiscal framework was devised. Though the state again struggled to meets its fiscal targets, the deficit started to fall from 2001/02 (Table 4.2). A second adjustment loan followed in February 2004, just a few months before state elections.

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[10] Worldwide, there has been a decline in the number of triggers or conditions from above 30 in the mid-1990s to about 11–12 in FY05 (World Bank, 2005b and 2006). This is similar to the trend seen in India if the first adjustment loan (to UP) is taken as the starting point or even if the APERP is taken as the starting point, bearing in mind that this investment operation also had dozens of sectoral conditions, not included in Table 5.1's trigger count.

Naidu's party lost the state assembly elections in 2004. The Congress Party fought elections on a platform of free power for farmers, and implemented it immediately after coming to power, an act which, as noted earlier, had led to the Bank's 'blacklisting' of Punjab in 1997. For a time, the dialogue around future adjustment loans was suspended. In other areas, however, the Congress Party seemed to be just as reform-minded as Naidu. After some very minor modification of the free power policy by the state government (a small tariff was to be charged to the richest 5 per cent of farmers), adjustment loan preparation resumed, and the Bank approved a third adjustment loan/credit in January 2007.

Adjustment lending to AP was politically controversial in its early days, especially because the reform program of the AP government was itself controversial: in a large protest in 2000 against a large power tariff hike, two protesters were killed (Kirk, 2005). Naidu was regularly criticized by the state opposition for 'selling out' to the World Bank. Yet, the transition to a post-Naidu era went remarkably smoothly and, of all the Bank–state relationships, the one with AP has been the most enduring and influential.

Uttar Pradesh

Uttar Pradesh (UP) is India's largest state, with a population of 166 million. UP is perhaps the best example of how the fiscal crisis forced states onto the reform path. A World Bank (1998) report on UP concluded that the state faced a 'fiscal crisis of unprecedented proportions.' This prompted the state's financial managers to approach the World Bank for assistance to tide over the crisis. With the agreement in 1999 for the introduction of sub-national adjustment lending into India, in April 2000 UP became the first Indian recipient of a sub-national adjustment loan, the Uttar Pradesh Fiscal Reform & Public Sector Restructuring Program (UPFRPSR).

UP lacked a stable political leadership, with an average tenure for its chief ministers of less than two years in the 1990s. The initiation of fiscal reforms in 1999 was spearheaded by a small group of senior bureaucrats, who, with support from the Bank, convinced the then political leadership that additional development spending would have to come from improved revenue performance and expenditure reforms, not from additional borrowing.

Subsequent operations did not materialize, mainly due to the lack of political stability. Both the political and the bureaucratic leadership changed soon after the first operation. Although one main party led the ruling coalition from 1998 to 2002, it was under three different leaders. The fiscal situation, as reflected by budgetary finances, improved until 2002–03, then went off-track and deteriorated, but has since improved again to the extent that the state runs a current account surplus. But the envisaged civil service reforms never really took off. More importantly, the power sector's performance deteriorated, with mounting losses that added to GoUP's contingent liabilities. While the power sector was not explicitly part of the adjustment operation,[11] progress in improving that sector's performance was considered by the World Bank to be a pre-condition for moving forward with subsequent operations.[12]

UP was a surprising choice as the pioneer for state-level adjustment lending. If AP was the paragon of a new-style reforming state, UP was the archetype non-developmental state, perceived as highly corrupt, lacking stable leadership, and dominated by caste politics. Yet UP was the only option at the time for moving forward with adjustment

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[11] A separate investment loan to support restructuring of the power sector in UP was approved by the World Bank at the same time as the adjustment operation, that is, in April 2000.

[12] The then Country Director was quoted in the media as stating that 'the World Bank stands ready to finance the cost of reforms in the power sector, but we are not willing to finance the cost of not reforming.'

lending. AP had only just received its large investment operation, and there were no other 'reforming' states queuing at the door. The UP operation was controversial within the Bank, but supported in India, perhaps because UP was viewed as trying to do something, because of the state's poverty, and because of its national, and political, importance.

For some, the failure of UP to move beyond its first operation was vindication of the position that the first UP operation should never have been proceeded with. For others, it was simply ahead of its time, and set the precedent for subsequent adjustment lending to other poor states, such as Orissa and, in December 2007, Bihar. Prospects for UP may have recently improved. In 2007, UP voters elected a government with an absolute majority, for the first time in almost two decades. After a gap of 7 years, the central government has requested the Bank to initiate adjustment lending to the state once again.

Karnataka

The same election which saw Naidu re-elected in Andhra Pradesh in 1999 also saw a change of government in Karnataka, with the return to power of the Congress Party under Chief Minister SM Krishna. Karnataka had a dialogue with the Bank prior to the election of Krishna, but it had never led to a large lending relationship. One of Krishna's first moves was to meet with the World Bank Country Director. The element of competition with AP was clear and often explicit. Karnataka felt that AP was threatening it, and that it was in danger of being left behind. The Chief Minister promised reform on a number of fronts, and Karnataka quickly became another focus state of the Bank. In return, the Bank promised significant assistance. A range of areas were discussed, one of them adjustment lending, through the Karnataka Economic Restructuring Loan/Credits.

The initial volume discussed for the first adjustment loan was $250 million. This was, however, reduced to $150 million when in 2001 the state government refused to implement an agricultural power tariff increase recommended by the state's Electricity Regulatory Commission. The power sector was not explicitly part of the adjustment loan series, but, as in UP, was taken into account when considering when and whether to move forward. The reason given by the Government for not moving forward with the tariff increase was heavy rains which had led to bumper harvests and depressed agricultural output prices. Ironically, the next two years were ones of drought, which made it even more difficult to implement power tariff adjustments to farmers with electrically driven pump sets.

The remaining $100 million was held over to a second loan with another set of triggers in the same thematic areas as the first. This loan was designed like a second tranche of an adjustment operation, to be achievable in a matter of months rather than years. All of the triggers bar one were achieved on time, resulting in Board approval just 9 months after the first operation, and disbursement within the same (Indian) fiscal year.

While this remains a record for the smallest gap between two of the state-level adjustment operations, the second operation was to be Karnataka's last. It turned out that fiscal performance in 2001–02 was worse than expected, with a fiscal deficit of 5.4 per cent of GSDP instead of the targeted 4.3 per cent. Power sector reforms also went much slower than expected. By 2002–03 the fiscal numbers were back on track. While the Bank argued that this course of events justified delay of the next in the envisaged series of annual Karnataka operations from 2002–03 to 2003–04, the Government of India was not prepared to allow the operation to go ahead even then, given that Karnataka had not met its Fiscal Reform Facility targets. Thus, although negotiations for the third KERL were planned at the same time as those for the second AP adjustment loan in late 2003, they did not take place.

In early 2004, state elections saw the defeat of Krishna and his Congress government. Unfortunately, neither of the various opposition parties received an outright majority, and the state entered into a period of unstable and weak coalitions. For a time, Congress returned to power as a minority coalition party, but then in 2005 another coalition took over, and Congress was relegated to opposition.

By 2004, it was clear that Karnataka's fiscal numbers were looking very good indeed, and the Government of India re-authorized preparations for the third state adjustment loan. The Bank took the position, however, that recent progress in the power sector had not been adequate to justify moving forward, and so again the operation was postponed. Meanwhile, political instability and infighting at the state level meant that the reform agenda lost some of the traction it had earlier, and the Bank-Karnataka engagement weakened.

Tamil Nadu

The Bank's engagement with Tamil Nadu, like that in Karnataka, was initiated by a change in government. Following her election in 2001, the new Chief Minister J. Jayalalithaa approached the Bank for assistance. Andhra Pradesh and Karnataka are both neighbours of Tamil Nadu, and again one sees the forces of competition and demonstration at work. The Bank responded positively to Tamil Nadu's approach, and work on a number of projects began, including an economic report to be followed by an adjustment operation. Three years later, in May 2004, the first of an envisaged series of adjustment operations had been prepared and negotiated and was ready for Board approval.

Unfortunately, just at this time, national elections were held in India, concluding in early May 2004. Tamil Nadu's ruling party did very badly in these, winning not a single seat in the state. This effectively wiped out the party at the national level, and boded poorly for the next round of state elections in 2006. The Chief Minister, seeking to recover her popularity, rolled back a number of reforms, including those on the basis of which the Bank loan had been prepared. These were announced on the very day the project was to be presented to the Bank Board, 18 May 2004, and it was only the 9.5 hour time difference between India and Washington that ensured that the announcements in India preceded the Board's discussion in Washington. Bank management decided to pull the operation from the Board that morning.[13]

The Bank probably had little alternative if it was to preserve its credibility. Not only did the measures reverse some of the agreed upfront actions for the loan, in particular by moving backward on food subsidy reductions and re-introducing a 'free power' regime in agriculture (following the case of Punjab in 1997, widely seen as a Rubicon-issue). More broadly the announcement by the Chief Minister was interpreted and reported by many as 'nullifying the entire economic and fiscal reforms process she set in motion after assuming power' (Jayanth, 2004).

This dramatic turn of events effectively brought an end to Tamil Nadu's adjustment loan prospects. Worried by her election prospects two years' hence (and rightly worried as it turned out; Jayalalithaa's party, the AIADMK, was trounced at the 2006 state elections), there was no appetite to reverse or even engage on some of the roll-back areas. Though Tamil Nadu's fiscal position continued to improve, it was too late for the state and Bank to engage on a new or revised reform program. While a number of investment projects went ahead, there was to be no adjustment loan for the state.

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[13] It was said to be the first time in the Bank's history that a project had been pulled from the Board on the day of intended presentation.

Orissa

Initiation of policy reform in Orissa was, as in UP, prompted by an acute fiscal crisis. Orissa was the poorest and most highly indebted among Indian states at the turn of the century. Interest payments, salary and pensions consumed 100 per cent of the state's total revenues in 1999/00, leaving negligible room for development expenditure. The historical and structural roots of the crisis included an excessively large and unaffordable civil service, an excessive number of loss making public enterprises and inefficient high schools and colleges claiming government grants, and a large debt overhang.

The World Bank was engaged in policy dialogue with the Government of Orissa (GoO) since the mid-nineties. Orissa was the first state to embrace power sector reform and privatization. An economic report was completed in 1999, and there was some hope that Orissa would follow UP to be the second adjustment state. But a cyclone caused extensive damage to the state in October 1999 and shifted priorities and high-level political attention away from reform in the direction of immediate rehabilitation and reconstruction.

The present Orissa government, headed by Chief Minister Naveen Patnaik, was first elected in early 2000, at the time of the fiscal crisis. It signed a Memorandum of Understanding with the Government of India in 2001, to undertake fiscal reforms in exchange for short-term financing. Starting in 2001, GoO also approached the World Bank once more for a structural adjustment loan.

It took another three years for GoO to demonstrate a sufficiently strong commitment and track record in addressing its fiscal problems. The first adjustment operation, the Orissa Socio-Economic Development Loan/Credit (OSEDL-I) amounting to $125 million, was approved in November 2004, by which time a significant fiscal correction had already been achieved.

By the time of the first operation, the Naveen Patnaik government had also been returned to power (in May 2004), sidestepping the anti-incumbency which dogged most of his counterparts in other states. Re-election strengthened the hands of the reform minded Chief Minister. A second operation with a focus on improving the investment climate and accelerating economic growth in the state was agreed in June 2006 for an amount of $225 million.

As it turned out, Orissa achieved the largest fiscal correction among all Indian states during 1999–2006, improving its primary fiscal balance by over 1.5 percentage points of GSDP per year. Before 2004, Orissa like other states had relied mainly on revenue enhancement to reduce deficits; after the electoral success, the Patnaik government found the courage to also move ahead on the expenditure front, to reduce unproductive salary and subsidy expenditures and rationalize capital spending.

Orissa has really been the 'surprise achiever' among the S-PBL states. The very significant fiscal correction and improved growth performance achieved by the state has put Orissa in a strong position to pursue subsequent adjustment operations.

4.5 Learning from Success: has Sub-National Policy Lending Worked in India?

Policy-based lending and conditionality have been much debated over the last twenty years. Some critics such as Collier (1997) and Easterly (2001) have argued that it is 'a failed instrument for promoting reform and growth.' Others hold more moderate views. Mosley et al. (1995) argue that conditional World Bank aid has affected the policies of

the recipients ‘a little, but not as much as the Bank hoped.’ According to Nicholas Stern, former Bank Chief Economist, adjustment lending can be ‘a substantial help at crucial times in moving things forward’ (Stern et al. 2005).

Even if there are various views around the efficacy of policy-based lending, there is widespread agreement that ‘policy formulation depends primarily on domestic political-economy factors’ (Devarajan et al., 2001), not on external leverage. Given this, those who nevertheless support the continuation of policy-based lending normally do so on the basis of one of two possible reasons. First, under the ‘backing winners’ theory, policy-based lending is a mechanism for channeling resources to better performing states/countries, and thus enhancing the productivity of those resources (Burnside and Dollar, 2000). Second, under the ‘lending facilitates reforms’ theory, policy-based lending can not compete with domestic political-economy factors for reform influence but can nevertheless be useful at the margins to influence policy, either directly in the state/country concerned, or indirectly through a demonstration impact.[14]

The Bank’s response to these findings has not been to abandon policy-based lending, which currently accounts for about 30 per cent of overall lending. Rather it has been to stress the need for country ‘ownership’ and to highlight ‘the importance of adapting Bank support to a country’s development priorities and implementation capacity’ (World Bank, 2006, p. 2). To implement this shift in approach, there have been various changes in modalities, largely along the lines followed in India. There has been a shift from relying on promises to actions (*ex ante* to *ex post* conditionality) as the basis for funds release, often using repeated or programmatic one-tranche operations. The lending process has become more public, with greater emphasis given to consultation.

What does India’s S-PBL teach us about the effectiveness of policy-based lending? Did the operations succeed? This is not an easy question to answer. Since the time period is too short, we make no effort to look at what PBL states did better than others in terms of key outcomes, such as growth or poverty reduction. Rather, we focus on intermediate policy variables, especially fiscal performance, which was central to all the operations.

We begin by looking at the original targets and reform objectives of the various operations and see to what extent they were fulfilled. For the five states discussed in the previous sections, we compare fiscal performance against the targets adopted in the various S-PBLs, starting in the year of the operation. We take the fiscal deficit as the measure of fiscal performance, since this was the one most stressed by the loans.

As shown in Table 4.2, Orissa and Tamil Nadu have consistently done better than their targets. Karnataka under-performed in its first two years, but has since over-achieved. AP went off-track from the start against APERP. Although the fiscal deficit has been on a declining trend since 2001–02, AP also under-performed against the targets of its first adjustment operation (2nd PBL), but achieved the targets of the second adjustment operation (3rd PBL). UP over-achieved for its first three years, then went off-track for two but largely due to a one-off securitization of power sector dues in 2003–04, and then came back on track. Even taking into account that TN was not a PBL state, overall performance against targets was largely on track.

[14] One variant of this argument is that conditionality can be useful as a ‘commitment mechanism’ for governments to convince markets that they are serious about reform (Dollar and Svensson, 2000).

Table 4.2: Fiscal Deficit: Target vs. Actuals

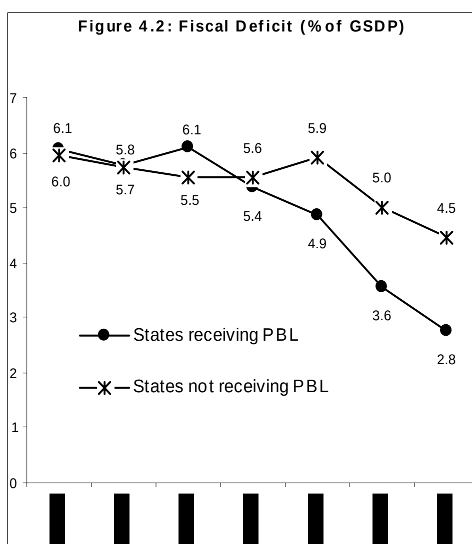
	FY 98–99	*FY 99–00*	*FY 00–01*	*FY 01–02*	*FY 02–03*	*FY 03–04*	*FY 04–05*	*FY 05–06*	*FY 06–07 (est)*
Andhra Pradesh									
Actuals	5.0	4.0	5.2	5.0	4.7	4.4	4.0	3.7	3.0
AP-PBL1 (target)	3.0	3.4	2.9	2.7	2.5				
AP-PBL2 (target)				5.0	4.5	3.9	3.2	2.5	
AP-PBL3 (target)						4.3	4.1	3.6	
AP-PBL4 (target)									3.2
Karnataka									
Actuals	3.5	6.3	4.0	5.4	4.5	3.5	2.4	2.3	
K-PBL1 (target)				4.3	4.2	3.7	3.0		
K-PBL2 (target)				4.6	4.7	4.5	3.5		
Orissa									
Actuals		9.7	8.6	9.2	8.0	6.0/a	2.6	0.4	1.1
O-PBL1 (target)							7.1	4.7	3.7
O-PBL2 (target)									2.4
Tamil Nadu									
Actuals		4.3	3.6	3.3	4.3	3.3	2.9	3.1	
TN-PBL (targets)						4.1	3.8	3.3	2.8
Uttar Pradesh /b									
Actuals		6.3	5.9	4.7	4.0	6.9/a	4.5	2.9	1.8
UP-PBL (targets)			7.0	6.0	5.3	4.6	3.9	3.2	2.7

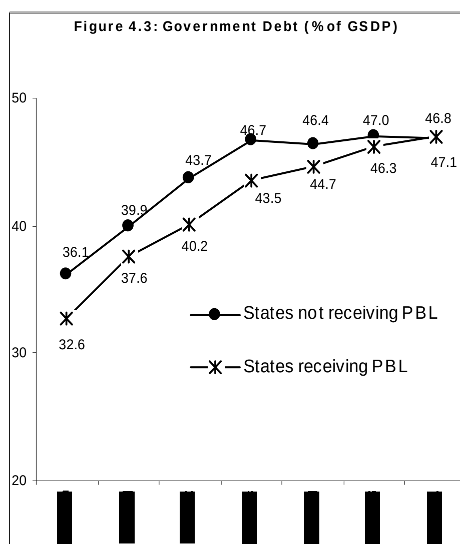
Note: Cells marked as [shaded] indicate the year in which the PBL was approved by the Bank and the money was disbursed.
/a Includes one-time impact of securitization of power utility dues.
/b Both targets and actuals refer to 'adjusted fiscal deficit', excluding an accounting entry called 'appropriation for avoidance of debt', which exaggerates the deficit.

Source: RBI (2006), World Bank Live Database

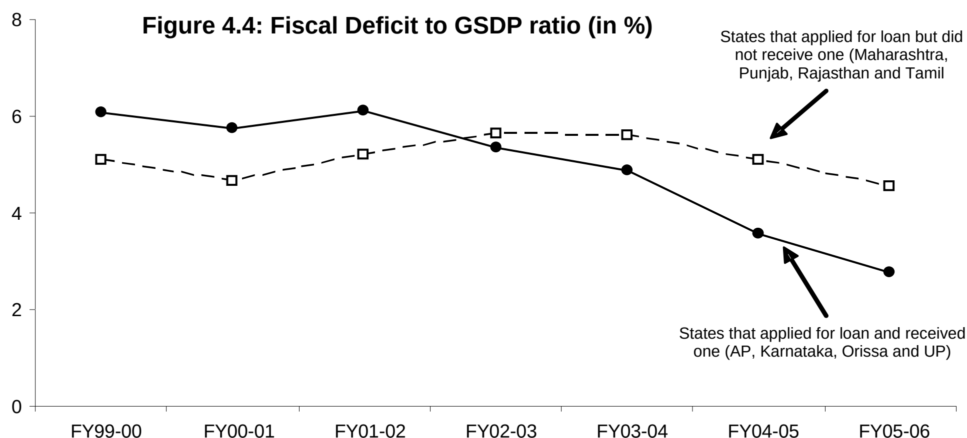
The limitation of this analysis is that it says nothing about whether the states which received policy-based loans did any differently to those which didn't. To compare reform progress across states, we again focus on fiscal reforms. Defining the group of states which received policy-based loans is difficult. One would clearly count AP and Orissa. But does one count Karnataka which failed to move past its second adjustment loan, or UP which only received one, or Tamil Nadu which qualified but then did not receive even its first adjustment loan? Moreover, several states have received PBLs from other donors (see footnote 11), making it difficult to identify a control group against whom the performance of the states receiving support from the World Bank can be compared. We define the experimental group to include all states which have received at least one policy-based operation, that is, UP, AP, Karnataka and Orissa, but not Tamil Nadu. The control group are all the other major states.

A comparison of the fiscal performance between states which received PBL and those that didn't shows that, on average, the former adjusted faster and earlier. As shown in Figure 4.2, in 1999/00, both groups of states had a fiscal deficit to GSDP ratio of around 6 per cent. The ratio fell to 2.8 per cent of GSDP in the PBL states by 2005/06, while it remained around 4.5 in the non-PBL states. The debt to GSDP ratio started to stabilize from 2002/03 in the PBL states, while it continued to increase in the non-PBL states up to 2005–06 (Figure 4.3).





Source: See Table 4.2.



Source: See Table 4.2.

There is hardly any difference in the average growth rates for the period between the two groups of states: 5.8 per cent for the PBL states and 5.4 per cent for the others as the average growth rate in Gross State Domestic Product (GSDP) between 1999–00 and 2005–06. This slightly faster growth might help explain some of the fiscal adjustment, but the PBL states also had better fiscal policies. Own-revenue (that is, revenue excluding transfers from the central government) increased by 2.4 percentage points of GSDP for the PBL states between 1999–00 and 2005–06, but only by 1.4 percentage points for the non-PBL states over the same period.

While the data clearly suggest that PBL states had better fiscal performance than the non-PBL states, since the non-PBL states did also start to adjust, albeit with a lag, the possibility cannot be ruled out that the effect of the S-PBLs was simply to accelerate a fiscal correction in the recipient states that would have happened in any case. Part of the subsequent fiscal correction in non-PBL states may well have been due to a demonstration effect; a large part was due to the macroeconomic factors outlined in Section 4.2.

Assuming that sub-national policy based lending did have a positive impact on fiscal performance, how would one explain this? Was the Bank picking winners or inducing reforms? The four states which received S-PBLs were a sub-set of a group of eight which requested Bank economic reports on their states. Since a report was a pre-requisite for an adjustment loan, we take a report request to be a proxy for wanting a loan,[15] and we can compare the performance of states which 'demanded' but were not selected for a loan (either by GoI or the Bank), and those which were. Clearly, from Figure 4.4, the selected states did much better than the non-selected.

It is unlikely that this large difference is explicable in terms of Bank influence on its selected states. Much more likely that between the Government of India and the Bank there was an effective screening process in place which considerably boosted the probability of winners being selected. The adverse selection problem in adjustment lending is well-known: it is often the worst-governed countries which are the most desperate for a loan, and so the most likely to promise but not deliver reforms (Dollar and Svensson, 2000). It appears that this problem was kept at bay in India.

Nevertheless, it is still likely that adjustment lending did, at the margin, induce reform, both fiscal and otherwise. We are aware of several cases where reform champions within a state found the additional pressure of meeting milestones agreed with the Bank as useful for overcoming political or bureaucratic resistance to reforms. More generally, the combination of funding, dialogue and persistent monitoring of reform progress helped give a greater focus to reforms than they would have otherwise received. The primary value of the policy-based lending was not to assist in the design of reforms, but to accelerate their implementation. And in a chaotic democracy where there are any number of 'reform distractions' (scandals, natural disasters, political challenges), this was a valuable role.

Benefits of S-PBL other than fiscal adjustment are harder to quantify. The PBL states were frontrunners in a number of reform areas: some of their reform achievements were independent of the adjustment operations, others arose out of them. Orissa has achieved faster completion of investment projects through improved prioritization under Zero Based Investment reviews: for example, the number of bridges completed during the year has risen from 19 in 2004–05 to 85 in 2005–06, and 128 in 2006–07. Andhra Pradesh

[15] This gets round the problem that some states might have put in a formal request to GoI which the Bank might not have seen, or might not have put in a formal request for fear of rejection. Reports were also written for Bihar and Jharkhand but at the instance of the Bank rather than the state and so are not included.

was the first state to introduce Single Window Clearance for new investment and is the only state to have amended its contract labour regulation act to make it easier to hire contract (non-permanent) labour. Andhra Pradesh's power utilities are rated the best in the country. Orissa has retrenched 30,000 workers from loss-making public enterprises.

The S-PBLs also provided a useful learning framework, where nation-wide problems could be diagnosed and solutions trialled in a specific context. Examples of this include pension reforms in Tamil Nadu (since spread to most states), efforts to control the widespread problem of premature transfers of civil servants in India in Karnataka (since taken up by the Government of India), and the passage by Karnataka of a Fiscal Responsibility Act (something which now almost all states have done).

Some of the positive benefits of S-PBL are less tangible than specific reform achievements. The S-PBLs provided a vehicle to support the conduct of diagnostic reports and more importantly the implementation of their recommendations, such as financial accountability assessments and public expenditure tracking surveys. The S-PBLs also provided the opportunity for cross-departmental policy discussions and dialogue at the highest level, not generally achievable with investment operations.

Finally, it is important not to lose sight of the possible national impact of S-PBL. Some have argued that the adoption by the Bank of a performance-based approach in its lending to the states encouraged the Government of India to move in the same direction (Kirk, 2006). More importantly, we would argue, the demonstration effect did work.[16] Bank focus on a small number of reforming states did help sensitize states to the needs for and benefits of reform. One cannot prove this statement, but the environment has certainly changed — from the mid-nineties when a 'reforming CM' was a rare and celebrated commodity, to the mid-years of this decade where the non-reforming CM is the rarity. Given the high-profile of the Bank at the state level, its association with state reform, and its interaction with many state governments, it would be odd to claim that the Bank had no role, even a minor one, in bringing this changed environment into being. If the Bank did have a role, it was not only through S-PBL — for several years, the entire Bank program was overwhelmingly dedicated to the goal of promoting state reforms. Nevertheless, as outlined in Section 4, S-PBL did emerge over the last decade as the main instrument for backing reform at the state level.

4.6 Learning from Failure: Sub-National Policy Based Lending and the Power Sector

Electricity is largely a state responsibility. Loss-making, heavily-subsidized and highly-inefficient power sectors have been one of the main sources of fiscal stress at the state level. Not surprisingly, therefore, power sector reform was fundamental to the Bank's approach at the state level. Becoming a focus state of the Bank entailed a requirement on the state that it 'embark on a comprehensive program of economic reforms, including fiscal and governance reforms and reforms of key sectors such as power.' (World Bank 2001, p. 35). There was a clear expectation that power sector reforms would be initiated and proceeded with as a pre-condition for accessing policy-based loans. For example, a precondition for the first S-PBL, the APERP, was the passage of a Power Sector Reform Bill in the State Assembly. In addition, for some of the adjustment operations, explicit power-sector triggers were used.

[16] We note that Kirk (2007) puts forward a contrary view: that the hoped-for demonstration effects 'are yet to materialize' (p. 268). But this seems to be based on out-dated information about fiscal trends, and without acknowledgement of the spread of reform orientation among state governments.

Overall, S-PBL states show mixed performance in regards of the power sector. A ranking by the central government of states in respect of their power sectors puts AP first and Karnataka fourth in overall performance out of 29 states. Uttar Pradesh and Orissa did much less well, coming 18th and 21st respectively.[17]

Notwithstanding the relative success of some of the PBL states, in an absolute sense power sector reforms failed, or at least did not follow anywhere near along envisaged lines. Power was certainly the sector PBL states struggled with more than any other. More than any other reform area, lack of progress in power sector reforms sunk the Bank's engagement in UP and Karnataka and, to a significant extent, Tamil Nadu. Problems in the same sector delayed loans to AP and Orissa. The difficulties encountered in the power sector can be seen most clearly in respect of two of the reforms promoted most heavily by the Bank: privatization of distribution, and a shift away from subsidized or even free pricing of electricity for farmers.

The privatization of distribution was seen by the Bank as critical to imparting into the power sector a more commercial orientation. Much electricity in India is simply stolen. It was argued that as long as distribution was under government control, it would be impossible to enforce basic commercial disciplines such as disconnection for non-payers. A number of states bought this argument in a series of state-level power-sector investment operations in the second half of the 1990s: Orissa, Haryana, AP and UP among others. But only Orissa followed through to the point of privatization, which it completed in 1999. The experience of Orissa is still debated, but, whether or nor privatization was a success, certainly it didn't transform the sector as quickly or as radically as expected. No other Bank-supported states followed in Orissa's footsteps (though Delhi, the capital territory, did, on its own, without Bank support). Several unbundled distribution in preparation for privatization, but none actually placed the newly-created companies on the market.

Many Indian farmers rely on electricity to extract ground water for irrigation. In most states, this electricity is unmetered and provided at highly subsidized rates, or for free in some. Moving away from this practice was seen as a critical part of the broader challenge facing state governments of moving away from populism to a more developmental approach. Since power was so cheap or free for farmers, it had to be rationed. Free power was shown to mainly benefit large farmers (Howes and Murgai, 2003). All farmers were shown to be worse off having low-price, low-quality power compared to full-price high-quality power (World Bank, 2001). In the late 1990s, several states started to reform the agricultural electricity regime with increases in tariffs, and attempts to meter farmers. In 2001 and 2003, respectively, two states which had run free power regimes, Tamil Nadu and Punjab, introduced tariffs for electricity for farmers. It looked for a while like a fundamental shift was underway. But disappointment was to follow. In 2004, Tamil Nadu returned to free power for farmers. An election change in AP led to free power in that state, also in 2004. Punjab reverted to free power in 2005. More generally, as Lal (2006, p. 9) observed: 'in state after state, power reform has lurched to a halt the moment it has run up against the agriculture sector.'

How did the Bank react to these developments? On privatization, the Bank initially took a hard line. Up to about 2001, commitment to the privatization of distribution was a *sine qua non* of Bank engagement. Subsequently, however, this position softened. It was becoming evident that Orissa's privatization experiment was not delivering the results expected, and it become more difficult therefore to urge states down this road if they

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[17] TN was 10th. CRISIL and ICRA (2006)

didn't want to go themselves.[18] In addition, Andhra Pradesh launched a huge anti-theft campaign in 2000 with dramatic results in terms of arrests and improved cash collections. This demonstrated that massive efficiency gains could be had under public ownership.

The more recent adjustment loans to AP contain no privatization commitments, but a heavy emphasis on continued loss and theft reduction. This is not necessarily an easier route for all states. The dialogue with UP shifted from an emphasis on privatization to theft reduction as early as 2001, but with very few results.

The story with free power is an even less happy one, as it was, and remains, a problem without a solution. On the one hand, as with privatisation, the Bank appeared to take a hard line. It essentially refused to work in states with free power (Punjab and Tamil Nadu in the late nineties), re-engaged with those states which moved away from free power (the same two states in 2001 and 2003), and suspended adjustment lending to states which introduced free power (Tamil Nadu and Andhra Pradesh in 2004).

On the other hand, it became evident that the Bank was adopting what might be called a 'fig leaf' approach. States knew that the Bank wouldn't lend to them if they introduced free power. But practice showed that the Bank would lend even if they moved only a very small direction away from free power. Thus states would introduce low tariffs but not collect them (Andhra Pradesh, Karnataka), or promise to reimburse farmers for them (Tamil Nadu), or introduce tariffs only on the very largest farmers (Tamil Nadu in 2002, Andhra Pradesh in 2005). These small 'delta' moves were fine as long as they could be construed as first steps away from free power, but over time it became obvious that they constituted a new equilibrium between the demands of the World Bank and the political imperatives of a largely rural democracy. It thus became of no real consequence whether a state had a free power policy or not: the only choice for several states was evidently between free and near-free power.

As with the shift away from an emphasis on privatization to efficiency gains under public ownership so too with free power there was an attempted shift away from cutting agricultural subsidies towards making them more transparent and on-budget, and towards compensating farmers for any hike in tariff prices. But, unlike in the former case, this shift did not work anywhere. No government has been able to put in place a satisfactory alternative to the current system of unmetered, rationed, virtually free power: perhaps a testament to the highly contentious nature of this issue and the low credibility of India's state governments (Keefer and Khemani, 2004).[19]

The limited success of S-PBL with respect to the power sector teaches several lessons. First, the free power issue in particular demonstrates the limits of incentive-based approaches to reform. External incentives can induce some reforms, but others are just too politically unpopular or sensitive. In these cases, where there is nevertheless an attempt to induce reforms, the outcomes are fairly predictable: loopholes are found, and compromises which allow both sides to proclaim victory, but there is no real movement on the ground. This is the sort of scenario well known from critiques, where policy-based lending if it tries 'to cajole governments to do things that they are really not interested in' degenerates into 'farce.' (Devarajan et al., 2001: 35)

Second, less obviously, and certainly less stressed in the literature, this sequence teaches the importance of uncertainty and learning in the adjustment lending context. The

[18] There were various reasons for the lack of success of Orissa's distribution privatization (see PPIAF, 2002). Post-privatization, the Bank had little capacity to influence the sector, not least because it had no leverage over the privately-owned companies.

[19] As early as February 2002, the first AP adjustment loan included a commitment by the Government to establish 'alternative subsidy delivery mechanisms for the supply of electricity to farmers.' By the third adjustment loan in December 2006, there was no progress to report on these, and no future targets set.

learning in the case of privatization was a technical one: privatization was not going to be the panacea it has been envisaged to be, and alternative mechanisms were identified to reduce power sector losses. The learning in the case of free power was a political one: moving away from free power was politically much harder than both the Bank and governments had thought. Rather than viewing developments in this area only as the result of cynical politicians manipulating a naïve World Bank, one can also view it as the outcome of reform under uncertainty. From our experience, state leaders who moved away from free power were not doing it cynically only to keep the World Bank happy. They also viewed the move as an important one away from populism. It appears that, at least initially, they too had no idea of how difficult moving away from free power would be, and how quickly they would have to reverse their decision. It was only over time that both political leaders and the World Bank appreciated just how difficult some of these reforms would be.

The importance of uncertainty and learning has important implications for how we view the failure to achieve various triggers or reform milestones. Failure to achieve reform milestones might imply poor reform performance against reasonable expectations, but it might also imply reasonable performance against unreasonable expectations. This in turn leads to the third observation, namely the need to balance credibility and flexibility in establishing reform programs. Flexibility (a willingness to amend milestones if not agreed) can send the signal that ‘anything goes’ (that no agreed milestones need to be taken seriously) and thus undermine reform incentives. On the other hand, recognizing that there will be a lot of learning (both technical and political) as a reform or adjustment program unfolds implies that a flexible approach has to be taken: not everything agreed upfront should be stuck to, because some of what was agreed probably doesn’t make sense. Taking a flexible approach is much easier when based on technical learning (the switch from privatization to focusing on efficiency gains under the public sector was relatively easy to justify) than political learning (it was always going to be difficult for the Bank to just ‘give up’ on free power when so much capital had been invested by it in demonstrating the importance of this issue). There is no easy way around this dilemma.[20] In the end, flexibility will prevail (or all lending will grind to a halt), and the only question becomes how to manage that inevitable shift.[21]

4.7 Learning from commonality: sub-national policy-based lending in a federation.

Sub-national policy lending has now been used in a number of countries, including Brazil, Argentina, Mexico, Pakistan and Russia as well as India. The Bank began making sub-national adjustment loans to various Argentine provinces, in 1998, before it did in India. Recently, Pakistan has started becoming a major recipient of sub-national loans, with three such loans in 2006. Nevertheless, the Indian experience is clearly the most extensive and expensive engagement with S-PBL, and should have a number of lessons to teach us on the utility of policy based lending within a federal context.

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[20] Replacing one-off multiple-tranche loans by a series of single-tranche loans (that is, the shift to programmatic lending) helps provide flexibility when what is needed are adjustments to the reform program, but will not help in the cases described here where what is required is a radical shift in position.

[21] A final irony in the free power saga is that in 2007 the Bank approved a loan to Punjab for rural water supply: the same loan that the Bank had rejected in 1997 because of Punjab’s introduction of free power. Preparation of the loan had begun again when Punjab reintroduced tarrifs for agricultural electricity, but by the time of approval the state had swung back to free power. But this time, there would be no holding back on the loan.

The most obvious difference between S-PBL and PBL is that the latter is based on a bilateral agreement between the sovereign country and the Bank whereas the former is based on a trilateral agreement between the sub-sovereign, the sovereign and the Bank. We begin this section by looking at the approach of the Government of India (GoI) to the Bank's S-PBL.

Overall, GoI has taken a supportive but cautious approach to the Bank's use of S-PBL. Following its initial approval of S-PBL in 2000, in early 2002, GoI called for a temporary halt so that a review of progress could be undertaken.[22] The result was guidelines for sub-national adjustment lending issued by GoI in December 2002, and then revised in December 2005, following the recommendations of the 12th Finance Commission. These guidelines largely endorsed the Bank's approach to S-PBL, but introduced several important changes. First, they introduced the requirement that access to S-PBL would be conditional on states being on-track with first the GoI Fiscal Reforms Facility and then its successor Debt Consolidation and Relief Facility. Second, the guidelines opened up access to the instrument: it was no longer to be restricted to 'focus states' only. Third, the 2005 guidelines introduced the requirement that adjustment loans should be multiple-tranche rather than one-tranche operations and that the primary use of loan receipts should be the retirement of higher-cost debt. Fourth, not through the guidelines but through the 2004 CAS, the ceiling on adjustment lending as a ratio of all lending was reduced from 20–30 per cent to 15 per cent.

With regards to individual operations, there were few cases where there was an explicit disagreement in position between the Bank and GoI. Karnataka's third adjustment loan was the exception where, in 2003, the Bank was ready to negotiate the loan, but GoI refused to give the go-ahead, and then, in 2004, when GoI did give the go-ahead the Bank declined to proceed to negotiations. In other cases, the decision-making was more sequential. States had to approach the Government of India to forward their application to the Bank for a loan. In general, for much of the period, GoI was cautious in extending the S-PBL to other states. The instrument was regarded as untested, and in need of proving its worth before extending too widely. Several states had their applications rejected including Maharasthra, Punjab and UP (after the first loan). Recently, however, GoI has forwarded a number of applications to the Bank, including for Himachal Pradesh, Bihar and UP.

The rationale for a sovereign government to want the Bank to engage at the sub-national level is well-established. The basic argument is that:

> For central governments, which may have limited power to influence the sovereign decision of subnational governments, World Bank involvement offers independent 'third-party' support for state-level reform and at the same time provides an external financial incentive for maintaining subnational fiscal discipline. (World Bank, 2006: 50. See also Kirk, 2006)

This rationale certainly applies to India. One lesson brought out clearly by the India experience is that, when dealing at the sub-national level, the Bank can afford to be more selective than it is at the national level. We showed in the previous section (see Figure 4.4 and the surrounding discussion) that there was an effective screening process in place, which enabled the problem of adverse selection to be avoided in India. It is evidently much harder for the Bank to say 'no' to an individual country than it was to say

[22] 'While adjustment lending at the state level has been a very useful instrument for supporting state reforms, its use has not been as widespread as anticipated in the CAS, partly because reforms have not moved as fast as expected, and partly because of a desire on the part of the GoI to review experience with adjustment lending at the state level… The future of subnational adjustment lending in India is currently under discussion between the Bank and the GoI.' (World Bank, 2003b, para. 88)

'no' to an individual state: only 4 out of 27 states received a PBL. And the fact that two entities (GoI and the Bank) had to say yes to individual states not just for the first but for each successive loan lowered the probably that 'lemons' (non-reforming states) would be selected. This capacity for greater selectivity suggests that policy-based lending might be more effective at the sub-national than the national level.

While the benefits are well-recognized, very little has been written on the possible costs or risks of Bank engagement at the sub-national level. Our review of India's experience suggests four possible risks or complications in turning to the Bank as a policy disciplining device for sub-national governments.

First, there is the problem of additionality. Bank adjustment loans are meant to provide 'rapidly disbursing policy-based financing … to address actual or anticipated development financing requirements' (World Bank, 2004b, para. 1). Yet this very additionality can become a problem at the sub-national level. Ter-Minassian and Craig (1997) argue convincingly for the establishment of global limits on sub-national borrowing. In India, loan resources released by the Bank are transferred to the state for which they are intended as loans. This means that by the standards of good fiscal federalism they should not be considered as additional resources but as substituting for other loan resources within the global limit. Various approaches were taken to, in effect, deny additionality. The Bank stressed that its targeting of the fiscal deficit limits would ensure that access to adjustment loans did not, in fact, entail additionality. Further, following the Twelfth Finance Commission the central government has become much more active in enforcing global borrowing limits on states.

The issue of the proper use of adjustment loan proceeds was also a lively one in this context. Earlier S-PBLs stressed the use of proceeds to finance the costs of reform, including bringing off-budget liabilities on-budget, paying for redundancy payments associated with public enterprise reform, and increasing or protecting priority expenditures. Later loans stressed the use of adjustment lending to retire high-cost debt: a form of earmarking which ensures no additionality.

The revised central guidelines for sub-national adjustment loans, issued in December 2005, make explicit both that such lending is not additional (to centrally imposed annual borrowing limits), but can only substitute other sources of borrowing, and that at least 50 per cent of the funds must be used by the state for debt swaps, that is, to pre-pay old expensive loans.

So, much effort was put in at various levels to ensure that S-PBLs were not additional. But then, without additionality, what is the incentive which adjustment loans provide to state governments to reform? If Bank adjustment loan resources are not additional, why do Indian states still show interest in policy based lending? There are three possible explanations: (i) state politicians may still (even if mistakenly) see Bank resources as additional; (ii) lending terms of the Bank are cheaper and debt swaps result in lower debt servicing in the future, so there are benefits, even if they are future ones; and (iii) state governments find the framework of policy dialogue, triggers around adjustment lending, and regular monitoring by the Bank useful instruments for pursuing and sustaining politically difficult reforms

Second, there is the problem of discretion. Policy-based lending as normally practiced and certainly as experienced at the sub-national level in India is a discretionary instrument. While triggers are specified in advance, judgment is involved in choosing the triggers (which, as noted earlier, differed considerably across states), in determining whether they have been met, and in deciding what to do if they haven't been. There are good grounds for this discretion, particularly in terms of the need to allow flexibility to accommodate learning, as discussed in the previous section. However, use of a

discretionary instrument such as S-PBL has the potential to undermine a rules-based approach to fiscal federal relations. India's federation is already criticized as discretionary, and so open to favoritism and abuse, precisely because of the ability of the central government to lend (its own and external resources) to state governments.[23] The dangers of discretion in a federal context suggests that S-PBL will need to be less discretionary than policy-based lending to sovereigns, that is, more uniform across states than across countries.[24]

Third, there is the issue of equity. Central governments might want to promote state-level reform, but might also want to support lagging states. The possibility of a trade-off between supporting equity and promoting reforms confronted the Bank in India at several times over the last decade, and, as discussed in Section 4.3, forced the end of the focus state strategy, when Bank support was perceived to have became too concentrated among non-lagging states. While there is no widely-accepted policy and institutional ranking for India's states (akin to the Country Policy and Institutional Assessment for poor countries) it is fair to say that, if there were such a ranking, commonly-regarded lagging states, such as UP, Bihar and Orissa would come towards the bottom of it, though the Orissa ranking may well have improved in recent years given its reform progress. Expanding adjustment lending to low-quality governments goes against international experience which has seen a flight to quality with a concentration of adjustment lending to governments with above-average quality (World Bank, 2006; Stern et al., 2005: 379). Thus any move to spread adjustment lending to lagging states will constitute an increased assumption of risk, as is suggested by experience to date (whereas the Orissa experience was positive, the UP one less so). The cautious approach taken in the case of Orissa, where loan preparation and dialogue went on for a period of about four years prior to the first loan approval, might have much to commend it as a risk-mitigation measure for adjustment lending to lagging states.

Fourth, there is the issue of harmonization. Should the Bank develop reform programs directly with state governments (the retail approach to state reform), or should it work through the central government (the wholesale approach)? In the case of India, not long after the Bank began its S-PBL, GoI came out with its own scheme to promote fiscal reform, the Fiscal Reforms Facility (FRF). From a harmonization perspective, one would argue that the Bank should stop supporting individual states, and instead support the central scheme. This was the approach taken in Russia, for example, and it was sometimes suggested that this wholesale approach should be taken in India. It is unlikely, however, that this suggestion would ever be taken up: centre-state relations is just too politically sensitive an issue to involve the Bank in explicitly and across-the-board. The S-PBL approach made sense in this context: confining Bank participation to states that welcomed it, while, to ensure consistency of instruments, making good performance under the FRF a pre-requisite for accessing Bank policy loans.

4.8 Learning from Diversity: Determinants of Sub-National Policy Based Lending Success.

Success with S-PBL shows a great deal of differentiation. Over the last decade, the Bank wrote economic reports for 8 of India's states, with a view that this might be the first step

[23] EPW (2004). Following the Twelfth Finance Commission, the central government has phased out lending to states except the on-lending of external loans. Under the Indian Constitution, states cannot borrow directly from external sources.

[24] As noted by Devarajan and Shah (2006).

down the road to an adjustment loan.[25] Of these 8 states which expressed demand for an adjustment loan (by agreeing to have a report written), only 4 received at least one adjustment loan, only 3 at least two, and only 1 more than two.

Whereas the previous section looked at the common feature behind all the sub-national policy loans to India — the federal context into which they were made — this final section of the chapter looks at the variability in the S-PBL experience, and tries to explain it.

Examination of the evidence in this regard points unambiguously to the importance of state level politics. As Section 4.5 on impact showed, S-PBL recipients did better on reforms than average, and much better than those states which requested but were denied such lending. As many other studies have found, reform performance is ultimately a function of domestic political forces.

The case-studies presented in Section 4.4 testify to the importance of political considerations, and in particular political stability. Out of the various S-PBL states, the two with the most politically stable environments were AP and Orissa: the two most successful participants in the S-PBL experiment. In AP, Naidu had 8 years as Chief Minister, and Congress will now have at least 5 in government. In Orissa, the current Chief Minister will have had a 9-year term before he faces elections again (in 2009). Karnataka, an intermediate case in terms of S-PBL success, experienced political stability from 2000 to 2004, but has experienced instability since: an instability which has made it impossible for it to get back on to the adjustment-lending wagon. Finally, the relative failure of UP can clearly be laid at the feet of chronic political instability, which rendered fragile any policy reform that an adjustment operation could help to engineer or respond to.

Of course, stability is not a sufficient condition for reform: for 15 years, Bihar was ruled by one party, but it has been, till the 2005 change of government, the archetypcal non-reforming government. But political stability is nevertheless an important asset for would-be reformers because instability narrows the time-horizons of politicians and forces them to focus on survival rather than development.

Political strength is also important. Tamil Nadu enjoys stable governments: incumbent governments invariably lose, but only after surviving a full 5-year term. But the ruling party's decimation in the national elections in 2004 caused it to become a lame-duck government in the run-up to the state election in 2006, which it predictably lost. Without power, and pre-occupied with survival, the government was unable to pursue politically difficult reforms.

Political factors at times also influenced S-PBL outcomes directly, rather than through reform prospects. The sequence of events in Tamil Nadu in 2004 did more damage to the states' prospects for an adjustment loan (which it destroyed, due to the timing of events as much as anything) than to its reform prospects, which though damaged were by no means destroyed, as TN's subsequent fiscal performance shows (Table 4.2).

More generally, the importance of political factors underlies the importance of luck in pursuing both reform outcomes and access to adjustment loans. Election results in India are often determined by factors other than economic reform. A survey by Kumar (2004) in 1998 revealed that only 28 per cent of voters said that they had even heard about economic reforms. Other factors such as protest votes against the national government, coalition and caste alliances are probably much more important for electoral outcomes.

[25] UP, Orissa, Karnataka, Punjab, Maharasthra, Rajasthan, Tamil Nadu, Andhra Pradesh. Of the other states, Gujurat, Madhya Pradesh and Kerala received loans from ADB. Reports were written on Bihar and Jharkhand but not with the intention of entering into adjustment lending.

But election results are crucial for reform prospects, as they determine both the stability, strength and the reform orientation of the state government for the next five years. So, non-economic issues become a critical exogenous factor in determining economic reform outcomes.

So far we have dealt with state-level politics, but what about federal politics? Has it been easier to access S-PBLs if the state's ruling party is aligned with the party at the centre? Khemani (2002) finds that states in India affiliated with the central government get 10 per cent more borrowing than others. Some observers argued that states politically aligned with the central government were favoured by both the Bank and GoI and given better access to S-PBLs than those which were not. This criticism was particularly made based on a comparison of AP and Karnataka (Kirk, 2005; EPW, 2004). State politics in AP have certainly been well-aligned with national politics over the last decade (with both levels changing — in the same direction — in 2004). The other S-PBL states have seen mixed — rather than full or zero — alignment with central politics. It would be naïve to think that a Chief Minister who was politically powerful at the national level did not have more chance of accessing a S-PBL than one who was not. However, we have also noted the rigorous screening process around the S-PBLs. This would have helped counter any political influence. And, ultimately, we have seen that states had to deliver reform results to gain and continue to receive access to policy-based lending. While it is impossible to quantify the impact of a state's political influence at the central level, it appears to be far from overwhelming, and a more minor determinant of success at accessing S-PBL than the influence of state politics on reform prospects.

4.9 Conclusion

The main conclusions of this chapter have already been stated in the introduction, and do not bear repeating here. The shift to sub-national policy-based lending in India ten years ago was a bold strategy suited to its time. Its subsequent track-record has confounded supporters and critics alike. S-PBL never took off to the extent originally envisaged. A difficult reform agenda and the need to reach a trilateral agreement around each operation (Bank, GoI, and the concerned state) kept the frequency of use of this instrument to about once a year, and the value to $150 million a year, only a fraction of the originally targeted $500–$900 million. But nor has S-PBL faded away as some predicted. To the contrary, the relatively cautious approach taken to its use has delivered good results, and ensured durability for the instrument. The last fiscal year was the most successful so far in terms of S-PBL volume, and there is a new list of state candidates (approved by GoI) demanding and receiving new policy-based lending: two loans have already been made in the eleventh year of policy-based lending to new states, Himachel Pradesh and Bihar.

India today is very different to India ten years ago. The fiscal situation is much improved. Growth is faster. And all states have embraced the national reform agenda. Yet there is much to be done to spread and sustain growth, and, especially, to improve service delivery. How sub-national policy-based lending evolves in this environment remains to be seen, but it will no doubt be another interesting story.

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5
Pension Reform in India

Mukul G. Asher[*]

5.1 Introduction

India initiated 'open-society, open-economy' paradigm in 1991. Since then, its macroeconomic performance has been fairly satisfactory. Positive developments have occurred in real GDP growth, saving and investment to GDP ratios, international trade, and foreign exchange reserves (Table 5.1).

Relative stagnation in agriculture which accounts for a fifth of GDP but for more than half of employment has however contributed to the concern that the growth has not been sufficiently inclusive.[1] Stagnation in organised sector employment, which usually falls under the purviews of various labor and social security laws, has also been a source of concern (Table 5.2). Generating varied opportunities for livelihoods and facilitating mobility of labor from agriculture to other sectors of the economy, without neglecting modernisation of agriculture, is essential. This is because the most important macroeconomic variable in economic security, for both young and the old, is trend rate of economic growth.

The benefits of growth however should be distributed widely. It is in this context that successful reform of pensions and old-age financing or what may be broadly termed as 'social security system' has become an essential element of managing globalisation. This is recognised in India's 11th five year plan which aims at '*faster and more inclusive growth*' (GOI, 2007a).

Globalisation has made social safety nets more rather than less necessary, as they cushion the blow for those most severely affected, help maintain the legitimacy of reform, and help avoid a backlash against the social and distributional consequences of globalisation. This argument has considerable validity in the case of India.

India however cannot simply adopt the philosophy, program design, and structures of the current welfare states, for provision of adequate and sustainable social security for its population. Its size, heterogeneity, and institutional and economic capacities require

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Exchange Rate: USD 1 = Rs. 40.42 as on 3 July 2007.

1 There has however been declining trend in poverty, though the rate of decline varies according to the survey method. The 61st round of large sample survey on household consumer expenditure puts the poverty ratio at national level at 22 per cent, as compared to 26 per cent in 1999–2000 (GOI, 2007a: 207–8). The method used is the mixed recall period under which data for five non-food items are collected for a 365 days recall period, and for food on the basis of 30 day recall period. If Uniform Recall Period (URP) is used data for all items are collected on the basis of 30 day recall period. The poverty rate of 22 per cent implies 240 million poor. Given India's low per capita income, poverty is much more visible and insidious, though India's Gini coefficient at around 0.35 has not risen significantly, and is much lower than other comparable countries. Poverty and inequality should be kept separate. The former is much more amenable to reduction through public policies directed at high inclusive growth. Public policies can lead to rapidly rising inequalities, but are much less effective in significantly reducing inequalities.

innovative approaches. India will grow old before it becomes a high income country. This is not to suggest that greater competency and professionalism should not be pursued in reforming existing provident and pension fund organisations.

The main objective of this chapter is to assess the current social security arrangements in India and to suggest reform directions. It is organised as follows. The next section briefly enumerates demographic and fiscal consolidation rationale for pension reform. This is followed by an overview of the current social security system in India. Section 5.4 focuses on future reform directions. The final section provides the concluding remarks.

Table 5.1: India: Selected Indicators of Macroeconomic Performance

Indicator	*1991–92*	*1995–96*	*2001–02*	*2005–06*
Real GDP (Rs. Billion)	7018	8991	12675	35672
Growth in Real GDP (%)	1.3	7.3	5.8	9.0
Inflation				
Wholesale Price Index — All commodities (Inflation in %)	13.7	8.1	3.6	4.1
Consumer Price Index — Industrial Worker (Inflation in %)	13.5	10.2	4.3	5.0
Domestic Investment				
Gross Domestic Capital Formation (% to GDP)	22.6	26.9	22.6	33.8
Gross Domestic Savings (% to GDP)	22.0	25.1	23.4	32.4
Foreign Investment				
Foreign Exchange Reserves (USD million)	5631	17044	51049	151000
Foreign Direct Investment (USD million)	129	2144	6131	4730
Total Foreign Investment Inflows (USD million)	133	4892	8152	9926
Trade				
Merchandise Exports (USD million)	17865	31797	43827	103091
Merchandise Imports (USD million)	19411	36678	51413	149166
Net Invisibles (USD million)	1620	5449	13485	42655
Current Account Balance (USD million)	-1178	-5910	782	-9186
Merchandise Exports/GDP (%)	6.9	9.1	9.3	n.a
Merchandise Imports/GDP (%)	7.9	12.3	12.0	n.a
Trade Balance/GDP (%)	-1.0	-3.2	-2.6	n.a
Current Account Balance/GDP (%)	-0.3	-1.7	0.2	n.a

Sources: Calculated from Government of India, Ministry of Finance, *Economic Survey*, 2003–04 and 2004–2005, 2006–07, Table 0.1 and RBI, *Handbook of Statistics on the Indian Economy*, 2003–04, Tables 1, 2, 10, 140, 153, 215, 216, 224, 225.

5.2 The Rationale for Reform

In addition to globalisation, demographic trends and need for fiscal consolidation are two major reasons for social security reform in India.

The share of elderly, or persons aged 65 years and above in India's population is expected to rise from 4.6 per cent in 2000 to 9 per cent in 2030. In absolute terms, the

number of elderly (aged above 60) will rise from 87.5 million in 2005 to 100.8 million in 2010 (Table 5.2). If current retirement age of 60 is taken as the cut-off point, in 2030, elderly will approach 200 million, and further to 330 million in 2050.

Table 5.2: India: Labor Force and Demographic Indicators

Indicator	*Time Period*	
Life Expectancy at Birth (Years)		
Male	2005–2010	63.2
Female		66.7
Life Expectancy at age 60 (Years)		
Male	2005–2010	16
Female		18
Total Fertility Rate *(No. of Children)	2005–2010	2.76
Population (million)		1103.0
Females (million)	2005	537.5
Males (million)		565.7
Sex Ratio *(males per 100 females)*	2005	105.2
Population above age 60 (million)	2005	87.5
	2010	100.8
	2050	329.6
Old Age Dependency Ratio *(%) ** *	2005	15.6
Working Age Population (million)	2000	619.7
	2025	921.5
	2050	1048.2
Employment by Sector		
Organised (Formal) Sector (%)	2003	9.9
Unorganised (Informal) Sector (%)	2003	91.1
Share of Public Sector Employment in Total Employment (%)	2001	3.3
Membership of Trade Unions as % of Labour Force (%)	2000	3.0

Notes: * Total Fertility Rate is defined as the average number of live childbirths over a woman's lifetime

** Old Age Dependency Ratio is defined as $\frac{(population\ above\ 60\ years)}{(population\ 15-59\ years)} \times 100$

Sources: 1. State of World Population, UNFPA, 2004
2. Adapted from Liebig and Rajan (2003): 20, Table 4
3. CIA World Fact book, Obtained from http://www.indexmundi.com/g/g.aspx?c=in&v=31
4. Census of India 2001
5. Adapted from Liebig and Rajan (eds) (2003)
6. Census of India 2001.
7. Asher and Mukhopadhaya (2006).

There are considerable variations among regions and states in fertility rates, life expectancy, and patterns of internal migration. In general, the southern states will experience much more rapid population ageing than the states in the north (Dyson, 2002).

The major public policy implication is that pension reform policies and programmes should not be based on the averages for the country as a whole, but on the basis of empirical data of each state. This is particularly relevant in designing defined benefit schemes, whether based on social insurance or provided by employers; and for social assistance programs. Predicting longevity trends and morbidity patterns is an inexact science. The actuarial assumptions should therefore reflect this, and permit flexibility in design parameters, if the schemes are to be sustainable over a long period.

An important implication of longer life expectancy concerns healthcare. Health resources consumed by a typical individual increases disproportionately with age. As an example, pension above 75 years of age consume much higher health resources per person than those between 65 and 74 years. Thus, pension and health care financing needs to be considered together for old age policy planning and programs. This is not an easy task. More research is urgently needed on such co-ordination.

Both the level and the pace of ageing are likely to provide significant challenges as even by 2030, India's per capita income will be relatively low. If the current normal retirement age of 60 is not increased, then the challenge of financing the elderly will be even greater. As women are increasingly living longer than men; greater feminisation of the population is taking place (Liebig and Rajan, 2003). Providing secure and sustainable retirement income therefore ranks high in the social priorities.

The current demographic transition has the potential to provide India with a significant competitive advantage in the form of a 'demographic dividend'[2]. In absolute numbers, India's working age population is projected to increase from 619.7 million in 2000 to 921.5 million in 2025, and to 1048.2 million in 2050 (Table 5.2). This is a double-edged advantage as it implies that net jobs creation must get priority over preserving existing jobs if this dividend is to be translated into higher growth and competitive advantage. However, higher working age population provides India with the potential to increase aggregate saving and investment rates, and thereby increase trend rate of growth (Sanyal, 2005). As the most important macroeconomic variable in providing economic security for both the young and the old is the trend rate of economic growth, India's demographic advantage phase could potentially permit it to make progress in developing more adequate and equitable social safety nets, while maintaining social cohesion.

To take advantage of the 'demographic dividend', modernisation of labor market structures and regulations will be required. The balance will need to be shifted to generation of additional jobs which are productive and sustainable rather than on preserving existing jobs. India's labor force in 2001 was 425 million, of which slightly less than a quarter was urban, while the rest was rural (Table 5.2). Design, structure and capacities concerning social safety nets differ considerably between urban and rural areas (Dev and Mooij, 2005). Thus, social assistance type programs, which require fiscal resources and effective public delivery systems, are likely to play a greater role in rural than in urban areas.

The greater prevalence of self-employment in rural areas requires differently designed pension schemes. In the urban sector, the nature of employment is also changing, with life-long employment becoming somewhat less prevalent, while labor mobility has become greater. Current trends suggest that by 2030, majority of India's population will be urban (Bloom and Canning, 2006).

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2 A major indicator of this advantage is the rising share of working age population in total population; it is expected that the proportion of the active-workforce in the population (that is, persons aged 15–59) will rise from 58.2 per cent in 2001 to 64 per cent in 2016 (Planning Commission, 2002). This share will not begin to decline till around 2045, but even then it will remain at a higher level than industrial countries, and China (IMF, 2004).

The above trends have meant that much greater importance will need to be given to pension benefit mobility across sectors and occupations than has been the case so far, and to more flexible compensation packages incorporating some degree of individual choice among various benefits (Chatterjee, 2004). The human resource management function is therefore likely to become quite complex. The 200 million elderly expected in 2030, and the new young entrants to the labor force, will need to increasingly rely on their own mandatory or voluntary savings to finance retirement.

Reform of social safety nets is also needed to assist in the process of fiscal consolidation (essentially reducing budget deficits) and fiscal flexibility (reallocation of budget towards growth enhancing expenditures). India's combined public sector deficit has been close to 9 per cent for many years, and could act as a major constraint on achieving higher growth (IMF, 2001). An important legislative measure, the Fiscal Responsibility and Budget Management Act (FRBMA), passed in 2003 does provide a degree of fiscal discipline on the central government. Recent high growth and resulting tax-revenue buoyancy has helped in reducing the fiscal deficit of the central government. However, only a handful of the 28 states have such mandated constraints on their fiscal behavior. The expenditure reform, including pension expenditure, will be crucial in sustaining recent gains made in fiscal consolidation.

There are also limitations of the existing social security system arising from inappropriate design features, limited professionalism with which they are implemented and inefficient delivery of social assistance benefits (GOI, 2000).

5.3 An Assessment of the Existing Social Security System

Since independence in 1947, India has constructed fairly complex set of social security laws, implementing regulations, and organisations. The policymakers have however essentially approached social security issues from purely welfare perspective and have under-emphasised the need for professionalism, long-term sustainability, robustness, and system-wide perspective

India's social security system has seven components — the Employee Provident Fund Organization (EPFO) schemes, the Civil Service schemes, the schemes of public enterprises, superannuation plans of the corporate sector, voluntary tax advantaged schemes, social assistance schemes, and micro-pension schemes (Figure 5.1).

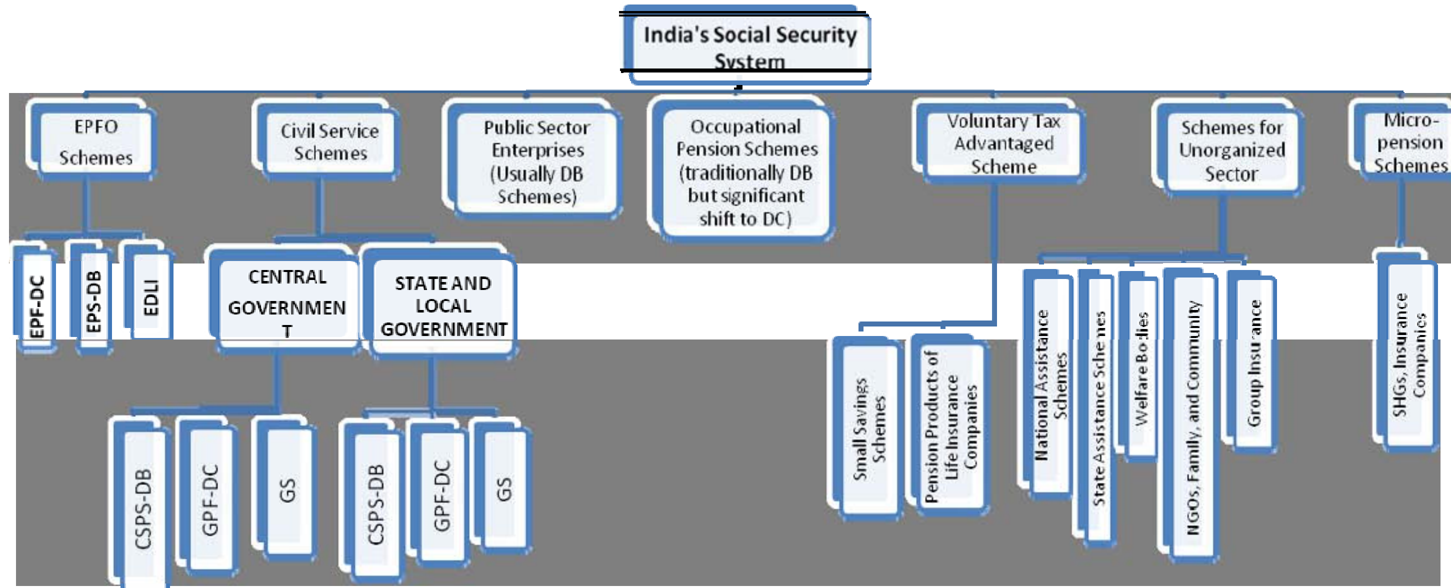
Civil Service schemes: The structure of retirement schemes for the 17 million civil servants at the Central, State and Local Government levels are broadly similar; consisting of three types of retirement benefits. Civil servants receive non-contributory, unfunded, Defined Benefit (DB) pension[3], which is indexed for prices and has fairly generous commutation provisions and survivors' benefits.[4] In addition, each employee is mandated to contribute a percentage of his salary to a Government Provident Fund (GPF) scheme. Finally, civil servants also receive lump sum gratuity benefit based on period of service and the salary level, with a maximum ceiling of Rs 0.35 million.

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[3] In a Defined Benefit (DB) scheme, the benefits to be provided are explicitly stated, while contributions are left undefined. In a DB scheme, it is the plan sponsor which bears the investment, mortality, and other risks.

[4] In India, Pay Commissions are periodically constituted to recommend civil servant's pay and other terms of employment. The upward revision in nominal pay has also been applied to civil service pensioners. Thus, there is also wage indexation which is in addition to price indexation.

Figure 5.1: India's Social Security System: An Overview



*From 1 January 2004, all newly recruited civil servants at the Centre (except for armed forces) are on a DC scheme.
19 states have also issued notification for a shift to a DC scheme, but their starting dates vary.

Abbreviations Used						
	CSPS	Civil Service Pension Scheme	DB	Defined Benefit	DC	Defined Contribution
	EDLI	Employees' Deposit Linked Insurance Scheme	EPF	Employees' Provident Fund	EPS	Employees' Pension Scheme
	GPF	Government Provident Fund	GS	Gratuity Scheme	NGO	Non-Government Organisations

Source: Author

In principle, each State has the freedom to design pension plans for its civil servants. In practice, States usually adopt the pension schemes followed by the Centre with relatively minor modifications. As a result States with different fiscal capacities end up having similar pension schemes; a practice that severely affects the ability of the poorer states to meet their wage and pension liabilities, and still leave aside resources for meeting social and infrastructural needs.

Over the years, many implementing rules and regulations concerning commutation (that is, the proportion of the total pension value which can be taken as lump sum) family pension benefits etc, have been introduced in an ad-hoc basis. Substantial efficiency, equity and cost savings are possible through parametric reforms in the existing civil service pension schemes. Such reforms involve altering the parameters of the existing pension scheme, such as the commutation formula, indexation method, eligibility criteria for family pension, etc. These reforms can help as over the years many ad-hoc provisions have been added, whose rationale may need re-examination. Thus, as provident fund, gratuity, and leave encashment allowance are all provided in lump sum at retirement, rationale for commutation as a method to provide for lump sum cash has become extremely weak.

The key reason for reforming these schemes is illustrated by the fact that while civil servants at all levels of government constitute only about 3 per cent of the total labor force, their retirement benefits are already equivalent to nearly 2 per cent of GDP. There is also high level of longevity and inflation risk protection as the benefits are indexed to prices and to wages. There are also generous survivors' and disability benefits.

The civil servants are the beneficiaries of the schemes but they also are the key actors in formulating and in implementing the civil service pensions. There is no independent regulator which oversees these schemes. This is contrary to good governance practices.

The economic and fiscal unsustainability of the schemes, and need for labor mobility led the central government to introduce a New Pension Scheme (NPS) for the civil servants entering the government service since 1 January 2004. The NPS is designed to be a scalable and sustainable pension scheme (Shah, 2005).

Addressing the longevity risk (accumulated balances may prove to be inadequate during lifetime of the retiree), and inflation risk (maintaining real value of the annuity throughout the retirement period) will however be a challenge. Sustainable risk-pooling arrangements will be needed, but there is inadequate policy and research focus on developing such arrangements.

The NPS currently does not have a provision for disability and survivors' benefits. A common international practice is to provide for these benefits through a compulsory group insurance, with premium contributed by the members. The contribution rate of the NPS at 20 per cent is relatively high by international standards. If 2 to 3 percentage points are diverted for such insurance, that could be sufficient to provide the coverage. Its flexibility should therefore be explored.

While the NPS is mandatory for the Central government employees, it has potentially a much wider reach. As of March 2007, 19 states which have decided to introduce similar schemes, mandating newly recruited civil servants to mandatorily join the NPS-type scheme. Some states are likely to implement the NPS in full without waiting for the political deadlock at the Centre (resulting in the PFRDA Bill not being passed by the Parliament) being resolved.[5]

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[5] In early 2007, the Central government has decided to give authority to the interim PFRDA to appoint record-keeping agency and fund managers for the NPS. But the political constraints have meant that only public sector organizations will be permitted to bid for these contracts. In the Finance Bill of 2007, proposal has been made to amend the Section 80CCD to enable not just the central government employees, but 'any other employer' to participate in the NPS.

Various public enterprises and statutory boards and aided institutions can also join NPS. The individuals, particularly those that do not enjoy formal employer-employee relationship may also find NPS a useful vehicle for retirement savings provided some of the current schemes such as Public Provident Fund (PPF) are either phased out or made more market consistent.

The estimates for potential membership of the NPS vary widely. A 2004 survey commissioned for the Ministry of Finance suggest that roughly 54 million persons in the unorganised sector have both the interest and the financial capacity to participate in the NPS. A study by Cashmore et al. (2005) puts the estimate at 80 million. Over next three decades, about 20 million civil servants and public sector workers will mandatorily join the NPS. The total potential membership therefore is between 75 to 100 million.

With rising trend of wages in India, pension assets will also grow rapidly. Cashmore et al. (2005) estimates that by 2015, pension assets under the NPS will be US$ 175 billion. These will need to be intermediated through the financial and capital markets. The supply of investment grade debt and equity assets, including divestment through control of state enterprises will also be needed. Measures to broaden and deepen financial and capital markets, improvements in corporate governance and enhanced capacity and willingness for international diversification of provident and pension fund assets will be required to invest these assets in productive and growth enhancing way.

The NPS will be supervised by a regulatory body, called the Provident Fund Regulatory and Development Authority (PFRDA). The PFRDA can help in achieving greater professionalism and system-wide perspective by bringing the civil service pension schemes at both Centre and States, Provident and Pension funds of State Enterprises, and Occupational Pension Plans under its purview. Among the major components, only the EPFO is currently not mandated to be regulated by the PFRDA but this could change overtime.[6]

The PFRDA has appointed a central Recordkeeping Agency (CRA) and three fund managers to manage accumulated balances in the NPS while the states can appoint their own CRA and fund managers. Precedence by the Centre will have significant influence on the entities selected.

Current various components of India's social security system (Figure 5.1) are supervised and regulated by different agencies, with little coordination or focus. The EPFO acts both as service provider and regulator (as well as approving authority) for funds which seek exemption from the EPFO. This dual role represents fundamental conflict of interests and should be ended. Permission for superannuation funds and for the excluded funds is under the jurisdiction of the Central Board of Direct Taxes (CBDT). It also, in principle, regulates these funds, though it has no capacity to undertake effective supervision. Since there is no centralised database for firms who have received permission from the CBDT for pension plans, the overall assessment of the effectiveness of current policies is also hampered.

The annuities will continue to be provided by the life insurance companies which are regulated by the Insurance Regulatory and Development Authority (IRDA).[7] An independent body is preparing revised mortality tables to enable better pricing of insurance policies and annuities in India. Since the NPS will involve exposure to financial and capital markets, regulated by Securities and Exchange Board of India (SEBI), close coordination

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6 In a strongly worded editorial dated 25 July 2007, *The Economic Times*, India's leading financial daily, has argued that the EPFO has shown singular reluctance to modernize, and unless it urgently and visibly improves its functioning, its members should be permitted to shift their funds to the managers appointed for the NPS (http://economictimes.indiatimes.
com/Opinion/Editorials/EPFO_needs_to_set_its_house_in_order/articleshow/2231384.cms)

7 The Reserve Bank of India has permitted banks to manage pension funds through subsidiaries with which it must maintain arms length relationship. Indeed, State Bank of India is one of the entities approved by rge PFRDA to manage Pension funds.

among the three regulators, the Ministry of Finance, and the Reserve Bank of India (RBI) will be needed.

The Indian government is to implement the EET system of taxation for pension savings under which contributions and the investment income in the accumulation phase will be exempt from income tax, but the withdrawals in the payout phase will be taxed. The tax system therefore is being aligned with the international practices. The transition phase however will have to be carefully negotiated. The 2007–08 budget did not contain any measures for implementing the EET treatment.

EPFO Schemes: EPFO was established in 1952. It thus predates the 1991 reforms which were designed to shift the state-market mix in favor of the latter, and integrates India's economy with the world economy in a market-consistent manner. It also predates globalisation phenomenon.

It is an unusual national provident fund in combining a Defined Benefit (DB) (Employees Pension Scheme, EPS introduced in 1995) and a Defined Contribution (DC) (Employee Provident Fund, EPF) scheme for its members. For over half a century, membership is confined to 181 designated industries, in firms employing more than 20 workers. This reflects the static organisational structure and culture.

The EPFO is governed by an unwieldy Board of 45 members, with Minister of Labor as the Chairperson. The Board has shown no inclination to access the requisite expertise as indicated by the absence of any independent experts on the Board or by setting up of advisory committees.

Table 5.3 summarises the contribution rates for each scheme. The EPF Scheme was established in 1952; EDLI Scheme in 1976; and the EPS in 1995. The EPS scheme is therefore relatively recent. The main challenge of paying promised pension benefits under the EPS, including family pensions to survivors, lies in the future.[8]

The total contributions to three mandatory schemes are 25.66 per cent, subject to a ceiling of Rs.6500 of wages per month. The wage ceiling has been raised at regular intervals. In addition, EPFO levies administrative charges of 1.11 per cent (equivalent to 4.4 per cent of the contributions); and inspection charges on EPFO exempt but regulated funds at 0.185 per cent.

The above contribution rates and charges represent benefit provision and administrative costs respectively. However, from an economy's point of view, cost of complying with EPFO regulations by establishments and members should also be added.[9]

On 31 March 2003, cumulative investments under the EPF scheme stood at Rs.1027.5 billion;[10] and the stock of investments under the EPS 1995 scheme and EDLI scheme were Rs.450.5 billion and Rs.34.9 billion respectively. Thus, collectively, the EPFO held investments worth Rs.1481.5 billion under its three schemes, equivalent to nearly 6 per cent of India's Gross Domestic Product (GDP) in 2003. The EPFO funds are almost wholly invested in government and public sector fixed investments. The EPFO Board has not permitted any funds to be invested in equities.

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[8] Estimates suggest that as of 2004 the EPS was under funded by at least Rs.220 billion (Bharadwaj and Dave, 2005).

[9] To my knowledge, no studies estimating such compliance costs have been undertaken, but anecdotal evidence suggests that the quality of service rendered by the EPFO is poor, and irregular side payments are not uncommon. In addition, the EPFO rules and regulations as well as budgeting and other administered procedures are outdated. Thus, the EPFO currently has no capability of transferring balances from one jurisdiction to the other when an employer changes jobs. More than four-fifths of EPFO's work load is unrelated to the retirement schemes. All these contribute to very high compliance costs. This is an area where more research is needed.

[10] This includes Rs.40 billion under EPFO regulated but exempted Trusts.

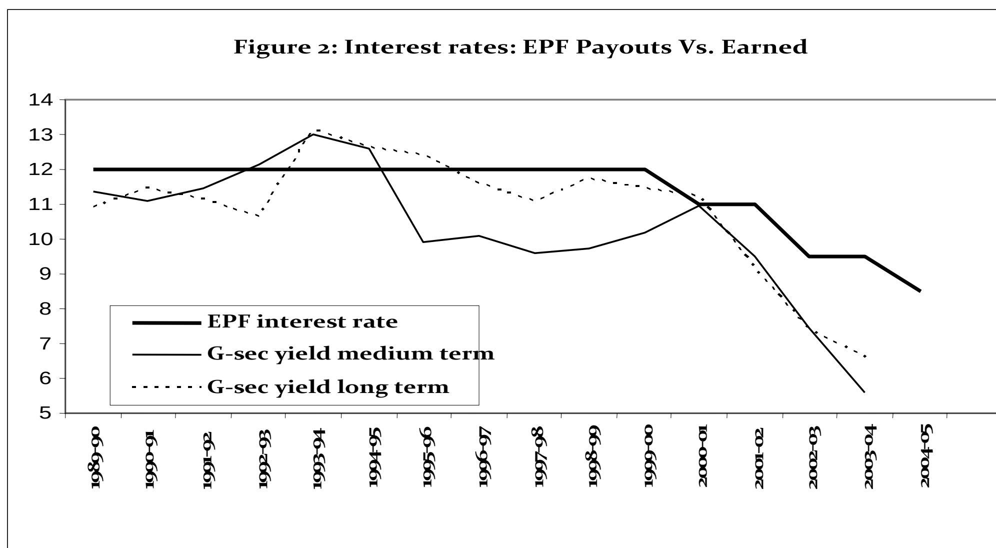
Table 5.3: Contribution Rates for the Schemes of the EPFO

Contribution [% of wages]	*EPF (1952)*	*EPS (1995)*	*EDLI (1976)*	*Total Contribution Rate*
Employer	3.67	8.33	0.50	12.50
Employee	12.00	nil	nil	12.00
Government	nil	1.16	nil	1.16
Total Contribution Rate	15.67	9.49	0.5	25.66
Administrative charges paid by employer [un-exempted sector only]	1.10	Paid out of EPS Fund	0.01	1.11
Inspection Charges paid by employer [exempted sector only]	0.18	n.a	0.005	0.185
Benefits	Accumulation plus interest on retirement, resignation, death. Partial withdrawals permitted for specific purposes	Monthly pension on superannuation, retirement, disability, survivor, widow/widower), children	Lump sum benefit on death while in service	

Notes: 1. As of March 2007, the wage ceiling to which the contribution rates apply was Rs.6500 per month.
2. The figures in brackets refer to the year in which the scheme was introduced.

Source: Employees Provident Fund and Miscellaneous Provisions Act, 1952.

Figure 5.2: Interest Rates: EPF Payouts vs Earned



Source: Calculated by the author

Figure 5.2 provides data concerning EPF payouts in comparison with the yield from government securities for 1989–90 to 2004–05 period. The data suggests that the EPF payouts have exceeded yields from medium and long-term government securities. The difference has widened considerably since 2000–01. Since all of EPF investments are in government securities, the implication is that the EPF has been paying interests in excess of the yields from investments. This is clearly unsustainable. It is imperative that the EPFO learns to earn through modern portfolio investment techniques, and pays what it earns.

The impact of outmoded design features such as high pre-retirement withdrawals permitted by the EPF and the low real returns is evident in data on members' balances in Table 5.4. The data indicate that 85 per cent of the members have balances of less than Rs 20,000, accounting for 17 per cent of total balances, with an average balance of only Rs 3133. Any interest or other subsidies therefore will disproportionately accrue to those with large balances. There were only 86 members with balances above Rs 50 lakhs but there average balance was 54.5 lakhs. Thus, any interest subsidy will disproportionately benefit this group.

The key challenge of the EPFO is to ensure that its high contribution rates translate into high benefits to its members and that its relatively large and costly administrative apparatus is commensurate with the quality and quantity of its services.

Public Sector Enterprises: Public sector enterprises including public sector insurance companies and banks, the Central Bank called the Reserve Bank of India, electricity boards, State oil companies etc have their own pension schemes, which are managed by the concerned enterprise with little regulatory oversight or supervision. The schemes are usually contributory in nature, but details about scheme design and their actuarial sustainability are not publicly available. Therefore the professionalism with which these schemes are designed and administered is also not known.

Table 5.4: Members' Balances (EPF)

Balance (in Rs.)	*No. of members*	*% of total members*	*% of total accumulation*	*Average Balance (in Rs.)*
Up to 20,000	293.4 lakh	84.58	16.98	3133
20,000–49,999	28.77 lakh	8.30	21.52	40,468
50,000–99,000	12.77 lakh	3.68	16.67	70,663
1 lakh – 1.99 lakh	7.91 lakh	2.28	20.25	1,38,414
2 lakh – 2.99 lakh	2.33 lakh	0.67	10.37	2,40,616
3 lakh – 3.99 lakh	82,629	0.24	5.23	3,41,959
4 lakh – 4.99 lakh	34,593	0.10	2.83	4,42,575
5 lakh – 9.99 lakh	36,297	0.10	4.29	6,40,229
10 lakh – 24.99 lakh	5973	0.02	1.45	13,16,782
25 lakh – 49.99 lakh	5973	0.0001	0.31	25,06,620
Above 50 lakh	86	0.00001	0.90	54,48,660

Source: EPFO, computed from Sridhar (2004).

Occupational Pension Schemes or Superannuation Schemes: These refer to employer sponsored schemes that are not statutory, but provide additional post-retirement income to employees on a regular basis (Chatterjee, 2004). These are governed under the Income Tax Act by the tax authorities. The schemes can be DB or DC in nature; and the liabilities are met by setting up Trust Funds, either self-managed or managed by the Life Insurance Corporation of India (LIC). It is estimated that pension assets in the private sector are at Rs2000 billion (US$ 48 billion), most of which are being managed by the insurance companies.[11]

Since 1956, LIC has been managing a plan that invests all the monies received from various Employee Retirement Benefit Funds into a pooled fund, of which 95 per cent are invested in government securities and bonds and 5 per cent in equities. Self managed trust funds are governed by the restrictive investment guidelines, which limit the earning potential of these funds.

The investments of insurance company administered superannuation schemes are regulated by the Insurance Regulatory and Development Authority (IRDA), though the overall granting and supervisory authority are the Income Tax authorities. IRDA has permitted the pension fund component of insurance companies to hold a diversified investment portfolio, including equities. The funds however can only be invested domestically. Unlike EPFO, the IRDA's guidelines for investment of pension funds managed by the life insurance companies are consistent with modern portfolio management principles and practices.

India's 2005–06 Budget introduced a Fringe Benefits Tax (FBT).[12] It involves what are administratively determined expenditures which may benefit employees, and therefore are taxed under the FBT. The statutory liability for the FBT is on the companies, though economic incidence which involves tax burden sharing among different economic agents once participants adjust their behaviour in response to the tax is unlikely to be solely on the employers (that is, shareholders). The definition of fringe benefits used is quite broad, and very unusually, includes superannuation benefits.[13] Partially as a result of strong representations by the insurance industry, and trenchant criticism of the FBT, the 2006–07 Budget included the provision that contribution by an employer for superannuation up to Rs. 1 lakh per year per employee will not attract FBT. This has softened the impact of FBT on superannuation.[14]

Voluntary tax advantaged savings schemes: These comprise small savings schemes (in 2003–04, outstanding small savings formed 21.1 per cent of the combined domestic liabilities of Centre and States, and gross mobilisation was at 5.3 per cent of GDP (GOI, 2004)); and individual and group annuity schemes of life insurance companies. Interest rates on small savings instruments have traditionally been set at above market rates, which distort allocation of savings. In particular, savings intermediated through mutual funds and market-based instruments in financial and capital markets are adversely impacted. Though there has been some rationalisation in rates since 2002, more progress is needed (GOI, 2004).

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[11] 'Separate bill on pension funds for private sector on the anvil' Posted at www.livemint.com on 24 Jun 2007

[12] The details of the FBT may be found in Finance Bill 2005 and Finance Bill 2006.

[13] Countries levying such a tax, such as Australia, specifically fully exempt superannuation contributions by both the employers and the employees at the time of contribution.

[14] Other arguments against the FBT however remain. First, it is an ad-hoc revenue measure which is inconsistent with the government's vision of moving towards low nominal income (and sales) tax rates- a broad base essential for a modern tax system. Second, it will inevitably provide greater discretionary powers to tax administrators and opportunities by industries to engage in lobbying for special exemptions. Both are undesirable. Third, voluntary superannuation funds have the potential to provide long-term funds to the financial and capital markets, and to contribute to financial innovation. These are essential if the government's objective of developing Mumbai into a financial centre is to be realized. Given such strong arguments against it, re-thinking on FBT is likely but the changes are unlikely until the 2006–07 Budget.

Schemes for the Unorganised Sector: The life time poor are provided assistance through Social Assistance Schemes (SAS), both at the Central and in the State levels. These schemes are usually means-tested and targeted at the destitute and poor and the infirm population over the age of 60 years. The pensions under these welfare schemes are expected to provide between Rs.55–Rs.300 per month, but their coverage is limited to between 10 and 15 per cent of the elderly population (Vaidyanathan, 2005). In addition, these schemes are usually under funded, poorly targeted, and suffer from significant leakages (Rajan *et al*, 1999). At present, majority of the workers in the unorganised sector (who form more than four-fifths of the country's workforce) are protected only through the efforts of welfare bodies, the community, or NGOs.

There is however a recognition that the terms 'unorganised' or 'informal' and the term 'rural' are too heterogeneous to be subjected to broad generalisations, particularly in terms of occupational income and consumption patterns (footnote 21).

In the Indian context., two broad options for expanding the pension coverage to include the unorganised sector are represented by the proposal based on social insurance of the National Commission for Enterprises in the Unorganised Sector (NCEUS) (Social Security Report available at www.nceus.gov.in), and the New Pension Scheme (NPS)-social assistance centred multi-pronged approach.

In a 2006 report, the NCEUS has advocated a comprehensive social insurance-based, government-run programme covering health benefits (hospitalisation, sickness allowance, and maternity benefit), life insurance, and provident fund (with provision for non-contributory pension for poor elderly workers). The report recommends coverage of 300 million workers over 5 years, that is, 60 million persons per year. It does not project the future trends in unorganised sector employment.

However, this option has severe limitations.

First, it does not take sufficient cognizance of administrative constraints, particularly those relating to record-keeping, collection of contributions, management information systems, and paying the benefits in a correct way without any side payments. The experience with extremely poor record-keeping by the Employees Provident Fund Organisation, the civil service pension schemes, and the recently-launched National Rural Employment Guarantee Scheme does not inspire confidence. All these schemes have much smaller number of participants than envisaged just for the first year by the NCEUS, and they focus on only one type of benefit.

The transactions costs of administering and complying with the scheme are likely to be disproportionately high, given the low nominal amounts of contribution and benefits, and due to a plethora of national and state level administrative structures.

Second, combining different schemes with a diametrically opposed economics, and the need for sophisticated actuarial estimates on a disaggregated basis, into one overall social security programme is bound to lead to non-transparency, and mis-specification of actuarially appropriate contributions. Longer life expectancy for example should lead to lower cost of life insurance, but substantially higher cost of pensions and healthcare.

Third, the report does not give sufficient weight to managing the political risk which in the Indian context has a high probability of undermining the sustainability and integrity of even well-designed social insurance schemes.

Fourth, the report does not project finances over a long period (in the US, finances of such schemes are routinely projected for 75 years and are made available publicly); and treats financing issues in a cavalier manner, demonstrating little understanding of economics of social insurance. It is astonishing that the media report suggests that the chairman of the NCEUS indicated that financial costs of the scheme are not their problem but that of the government.

The report also implicitly relies on high administered interest rates subsidised by the government for managing accumulated provident fund balances. This defeats the purpose of mandatory savings because only when such savings are invested in growth-enhancing projects, can national savings increase?

Fifth, the nation-wide social insurance approach forecloses experimentation, flexibility and gradualism, which have been the hallmarks of India's successful calibrated globalisation.

Sixth, the NCEUS programme will immediately and substantially increase demand, particularly for health services, but there is no analysis of how the corresponding increase in the supply of healthcare services will be achieved. These can not be increased rapidly as there is a long lead time. Even for the current demand, supply of healthcare facilities, particularly for lower income groups, is grossly inadequate and inefficient. This is largely the failure of government-provided or guided facilities. The NCEUS option will give these governmental organisations vastly expanded responsibilities.

Mehrotra and Biggeri (2007) have argued against a universal, citizenship-based scheme for all workers in the short-run. A universal scheme will require the use of general government revenues to finance such a scheme, as beneficiary contributions are not expected to be sufficient; and the pre-requisites for such schemes such as registration and record-keeping systems are lacking.

They argue for a product/group or trades based risk-pooling mechanism that is not primarily financed from beneficiary contributions, but on special taxes on the concerned products. Since the social security schemes are for long term lasting 60 years or more, the existing product-based arrangements could in some cases be too static as economic structure may significantly over time. This is likely to be specially the case in India.

It is important to recognise that social risk-pooling can be undertaken in a variety of ways, and not necessarily through insurance alone. The point at which social risk pooling occurs, can also be varied through policy design. As an example, providing a bank deposit or a bond instrument in the pay-out phase of a DC scheme paying higher than the market interest rate financed through the general budget is a form of social risk-pooling. Similarly, targeted social assistance programmes, financed from general budgetary revenue is also a form of risk-pooling and risk-sharing. Insurance mechanism is exceedingly complex, particularly when a country is undergoing demographic transition, and changing morbidity and mortality patterns.

The innovations therefore should encourage variety of arrangements for social risk-pooling and risk-sharing, and not be overly fixed on one method such as social insurance.

Extremely limited fiscal capacity, poor targeting of beneficiaries and inefficient delivery systems with significant leakages are major constraints on the effectiveness of social assistance programmes to reach the large number of lifetime poor. But this method is equitable and potentially more effective, provided existing constraints are addressed. Therefore those in favor of expanded social assistance programmes should vigorously support fiscal reforms designed to bring about fiscal consolidation and fiscal flexibility, and civil service and governance reform.

Micro-pension schemes: A typical micro-pension scheme is based on voluntary savings, accumulated over a long period and intermediated through financial and capital markets by a professional fund manager. The total amount accumulated depends on contributions (less permitted pre-retirement withdrawals), and investment returns net of administrative, investment management and other expenses. At an agreed-upon withdrawal age (usually 58 or 60 years), the accumulated balances can be withdrawn in a lump-sum, a phased withdrawal, annuity or some combination of these methods. These also appear to show promise, though the pay-out phase needs to be given greater weight (Asher and Nandy, 2006b).

Recent examples of such a scheme both include UTI AMC as fund manager are in operation. The first by Self Employed Women Association (SEWA) was launched in April 2006; while the second by Bihar Milk Cooperative (COMFED) was launched in September 2006.[15] Their combined membership is only 1 lakh. In contrast, it is estimated that about 35 million individuals have benefited from micro-finance schemes, primarily through self-help groups (SHGs). While the short-term nature of SHG activities, and relatively short life span of most SHGs are not directly comparable to the long-term nature of the micro-pension schemes based on individuals, the members of the SHGs are potential customers for micro-pension schemes. The pension scheme involves contributions ranging from Rs. 50 to Rs.100 per month per member.

The contributions must be made until age 55 and the pension payments begin after age 58. The savings are pooled by the Bank and transferred to UTI Mutual Fund for investment management. Each member has a pension account with the SEWA Bank which regularly provides information about the pension accounts. It appears that the accumulated amounts will be insufficient for substantial annuity. Therefore other options such as phased withdrawals may need to be considered. It is possible to introduce some social risk pooling through specially designed bank accounts and bonds (Asher and Nandy, 2006b).

Reverse mortgage arrangements to turn housing equity into retirement consumption stream represent another option. The 2007–08 budget has proposed that the National Housing Bank (NHB) consider such an instrument.

Micro-pensions have the potential to play a limited role as one of the methods for financing old-age (Asher and Shankar, 2007). The extent of their potential will depend on the following factors.

First, in the accumulation phase, minimising the transaction costs associated with record-keeping, payment of benefits, communication to members, and investment policies and management should be given due emphasis. Second, in savings-based micro-pension schemes, investment, macroeconomic and other risks are borne by the individual. Risk-sharing arrangements have therefore been often advocated, although longevity and inflation risks will have to be addressed. Third, arrangements during the pay-out phase need to be carefully considered while 40 per cent lump-sum withdrawal of the accumulated funds appears realistic. Fourth, micro-pensions represent a long-term financial contract, with potential for significant agency problems, and systemic risk to the financial system.

To make micro-pensions more attractive, considerable innovation which enables provision of goods and services to the poor at a fraction of the cost to the middle and high income groups should be applied to micro-pensions. This will require that organisations involved in micro-pension industry are able to benefit from economies of scale and scope.[16]

Need for Reforms: Each of the seven components of the social security system is in need of urgent reforms. These should address two major limitations of the existing pension system.

First, there is a need to significantly enhance the professionalism with which the core functions are being performed by provident and pension funds. The core functions of any provident or pension fund include the reliable collection of contribution/taxes, and other receipts; payment of benefits for each of the schemes in a correct way; efficient financial management and productive investment of provident and pension assets; maintenance of an

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[15] Trade unions can be encouraged to participate in micro-pension schemes. If even a few trade unions initiate such schemes, it will advance pensions and financial literacy, with positive consequences for EPFO reform.

[16] This argument represents an application of the thesis advanced by Prahalad (2005) that those at the bottom of the pyramid should not be considered as beyond the reach of profit-making businesses. A necessary corollary of Prahalad’s thesis emphasizing the consumption aspects is that capabilities of those at the bottom must be improved and appropriate infrastructure and policy environment should be provided for them to participate more meaningfully in the production activities.

effective communication network, including development of accurate data and record keeping mechanisms to support collection, payment and financial activities; and production of financial statements and reports that are tied to providing effective and reliable governance, fiduciary responsibility, transparency, and accountability (Ross, 2000). The foundation of a sustainable pension system should be built on a judicial system with modern laws and regulations which are consistent with the economic paradigm of the country; enabling regulatory environment; sound scheme design; widespread use of information technology and adoption of good governance principles (Asher and Nandy, 2006a). The importance of tyranny of small numbers[17] should be clearly recognised in design and governance structures of provident and pension funds.

Second, there is no overall systemic perspective of social security, despite over a decade of steady reform in other sectors of the economy. There are four regulatory bodies — IRDA, the EPFO, the Income Tax Authority and the newly set up PFRDA, each with some degree of jurisdiction in specific areas of operation. The presence of multiple regulators reduces the overall accountability of the operators, and does not produce a harmonised legal environment. The tax treatment of various provident and pension fund schemes also varies considerably. This is complicated by high administered interest rates on some of the savings instruments, whose receipts are channeled into government consumption expenditure.

As a result, the current system has many instances where sufficient attention is not being paid to improving professionalism and achieving international standards in management and efficient provision of retirement support. The EPFO, with balances equivalent to about 6 per cent of GDP, may be considered to be among India's largest Non-Banking Financial Institutions. Yet its current governance structure is antithetical to modern norms of corporate governance. It is managed by the Central Board of Trustees, numbering 45 (an unwieldy number), entirely appointed by the Central Government, with no provision for independent experts from outside the government. There are many design provisions (such as permitting members to withdraw balances from the DB pensions scheme and yet retain pension benefits when later contributions are made) which need to be made consistent with modern provident and pension fund practices.

EPFO itself is both a service provider and the regulator for the sector, which includes over 3000 exempt funds. EPFO is responsible for granting exemptions and supervising exempt funds. Average balance in the exempt funds is larger than for the EPFO. EPFO does not have a professional investment or treasury department for managing funds of this dimension, even though it employs close to 20,000 staff. This is possible because it operates under an outmoded investment regime, which does not permit effective asset diversification among asset classes and sectors. Thus EPFO contributors are effectively debarred from earning market-related returns. Excessive political interference allows pension fund providers such as EPFO and post office savings schemes to maintain nominal interest rates which are higher than obtained from investments.[18] This is clearly unsustainable.

As the main social security institution in India, the EPFO must prepare itself to handle concerns over cross-border social security agreements. There are a large number of Indian citizens working abroad such as in the US, and Canada who contribute to social security systems of the host countries of workers and of India. Most however do not work long enough in these countries to receive benefits. The key constraint of the EPFO is its inability to effectively implement such agreements. This lack of professionalism on the part of the EPFO is therefore costing Indian workers and the country dear.

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[17] As an example, even seemingly small alteration in parameters of a DB scheme, such as commutation rules, pension formula or age of receiving full pension could fundamentally alter the financial viability of the scheme.

[18] It has led to the curious practice of the EPFO Board considering interest rate to be credited to members' accounts at the beginning rather than at the end of the financial year.

India is also a recipient country for foreign workers; about 0.1 million US citizens are employed in India. A cross-border agreement between the EPFO and foreign social security institutions is in the interests of both the foreign and host countries. Civil Service Pensions form only one component of the social security system, covering 3 per cent of the labour force, but outflows on this account make up more than 2 per cent of GDP. The Implicit Pension Debt (IPD), defined as the Net Present Value (NPV) of future payments to existing workers, existing pension pensioners and family pensioners, is estimated to be about 55 per cent of GDP in 2004 prices (Bhardwaj and Dave, 2005).[19] In any society, at any given time, only the consumption component of GDP is available for purchasing goods and services by both the young and the old. Since society has many priorities, resources for old age financing compete against other needs. If a small proportion of the elderly (such as civil servants in India) are allotted a disproportionate share of resources that society can set aside for the elderly; there will be severe challenges in addressing the retirement needs of the vast majority, creating marked dualism in social safety net provision. This in turn may negatively impact on political and social cohesion.

The states are also finding that meeting pension liabilities is adversely impacting fiscal consolidation efforts, and expenditure re-allocation towards growth and social cohesion enhancing expenditures. State-wise pension payments as a percentage of states' own revenue receipts have increased from an average of 5.2 per cent during 1980–90 to 17.2 per cent in 2001–02 (RBI, 2003). The situation is likely to worsen if no corrective actions are taken.

Little information is available about the actuarial soundness of retirement schemes of public sector enterprises, or on occupational pension schemes. There is obviously a need to regulate them to ensure greater professionalism, transparency and fiduciary responsibility. The proposed changes in India's accounting standards, particularly AS (Accounting Standard) 15 which will align it to FAS 87 of the international accounting standards will significantly increase disclosure and reporting requirements for pension, health, and other liabilities which the companies have left unfunded. This may create adverse impact on profit and loss accounts of the Organization. As an example, public sector banks have made pension, gratuity, and other promises. But it is not known to what extent they have provided for their funding. To the extent they have not, and the changes in the accounting standards will require them to do so, their reported profits will decline, with implication of their risk rating by financial and capital markets. It is essential that all these plans be regulated by a regulator.

The unorganised sector is quite heterogeneous. In fact, some workers in this sector (for instance, small but prosperous shopkeepers) maybe better equipped financially for retirement as compared to low-wage workers in the formal sector. Thus any social security scheme for the unorganised sector has to be nuanced, with scope for self-selection of participants, and in some cases specifically targeted. This suggests that any government contribution for the so-called unorganised sector will be unwarranted as many in the unorganised sector have the capacity, and perhaps, motivation to save for retirement. However, for a significant proportion that is life-time poor, more effective and generous social assistance programs will be needed. This is an important reason for fiscal consolidation and reform at both the Centre and in the States.

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[19] While there is a strong case for reforming the civil service pensions, the IPD estimate however should be kept in perspective, and their policy implications should be carefully considered. The IPD is a stock concept while the GDP is Flow concept. The IPD concept chosen by Bhardwaj and Dave does not take into account growth in GDP, focusing only on pension liabilities. Countries have traditionally under taken parametric reforms to manage pension liabilities, and there is considerable scope for such reforms in India. Never the less their study is welcome as it give impetus towards empirical evidence based policies.

5.4 Reform Directions

It is clear that each element of India's social security system needs to be tackled differently, and improvements made should be consistent with the overall functions of any social security system (namely, smoothing consumption over lifetime, addressing against longevity and inflation risks, income redistribution, and poverty relief achieved in a sustainable manner). While there has been intensive debate on social security reform around the world over the last two decades, predictably no single model suitable for all countries has emerged. The World Bank's most recent position paper on pension reform is structured around a five-tier framework,[20] and it recognises that local context and capacities are crucial in determining the importance and sequencing of each tier, as well as how each tier is organised. The multi-tier framework is useful as it provides a strong rationale for drawing retirement income from a variety of sources, thus mitigating the risk of over-reliance on one scheme or method. This strongly suggests that each retirement scheme need not provide the requisite retirement resources and risks.

Broad Directions

In the case of India, broad directions of reform include expansion of social security coverage; increase in organisational efficiency and professionalism, provision of a systemic perspective and development of the sector in its entirety, including industry professionals such as actuaries and researchers.[21] Reform of social safety nets will require reform in complementary areas including financial and capital markets, fiscal management, labour market and administrative and civil service reform. Such complementary reforms are a huge challenge in any country, and India is no exception in this regard.

Pension Regulator

Establishment of the interim PFRDA (ordinance No.8/2004) in 2004 and the introduction of the PFRDA Bill (Bill No.36 of 2005) in the 2005 budget session of the Parliament constituted a major milestones. The Standing Committee on Finance of the Parliament has cleared the Bill, but the left Parties which have disproportionate influence on current coalition government, have stymied its passage. The government is considering a separate bill for voluntary defined contribution scheme for private sector workers. *('Separate bill on pension funds for private sector on the anvil' Posted at www.livemint.com on 24 Jun 2007)*

As discussed in the previous sections, the case for establishing a pension's regulator in India is overwhelming. Greater professionalism in the pensions industry; lowering of transactions costs in performing tasks noted earlier; greater efficiency in intermediating long term pensions savings to enhance economic growth which is a pre-requisite for economic security for both the young and the old; potential for pensions industry (and complementary reforms) to increase India's competitive edge and diversify export basket for services, all

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[20] The tiers are as follows: a basic universal or means-tested social pension financed from budgetary sources forms the tier zero; a mandated socially risk-pooled public pension, DC or notional DC in nature and financed through contributions forms the first tier and mandated occupation or personal pension plans managed publicly or privately form the second tier. Voluntary occupation or personal pension plans form the third tier; and the last includes personal savings, home ownership, family and community support, gold, land and other assets (Holzmann and Hinz, 2005). This version has two new tiers, tier zero and tier four, and it recognizes that individual mandatory savings accounts and solely private management of their investments may not be appropriate when enabling conditions, such as good record-keeping, sufficiently developed financial and capital markets, including requisite human resources.

[21] Introduction of graduate level degree programs in pension science, and encouraging rigorous empirical evidence-based policy relevant research on pensions issues in India merit serious consideration. The aim should be to move away from descriptive, general and ideologically driven work on social security. India should therefore seriously consider developing a world class pension research centre.

strongly suggest a need for a pensions regulator. It is noteworthy that high-income industrial countries do not leave pensions sector to be solely regulated to the forces of self-regulation or the markets, but have strong state regulators (regulation in this case is a public good which market will significantly under provide), supplemented by transparent rules requiring disclosure and transparency for even the state-run social insurance schemes.[22]

It is essential that while the Parliament is considering the Bill, the interim PFRDA continues its dialogue with the States to ensure smooth integration of State and Central government pension schemes. While some of the parameters (such as the contribution rates) may differ among various states, and between states and the Centre, the PFRDA must remain the sole regulatory body for the civil service pensions.

The interim PFRDA can also help in ensuring that procedures of collections of pension contributions, record-keeping, member information dissemination etc are efficient with low transactions costs. It could also undertake studies of modalities for introducing the Central Record keeping Agency (CRA); Points of Presence (POP) mechanisms; and criteria for selecting pension fund managers.[23]

Coverage

India faces a huge challenge in improving pension coverage (only about a fifth of the labour force is covered), particularly among workers who are not employed in the formal private or government sector. Of the total earning workforce of 450 million, 85 per cent, or about 380 million work in sectors other than the formal private sector and the Government — and are usually classified as belonging to the unorganised sector.

However, the primary occupations of workers in this category are wide-ranging including self-employed farmers and wage labour (accounting for over 60 per cent of the unorganised sector), self-employed business owners (13.8 per cent), salaried and/or contractual employees in the informal sector (5.4 per cent), self-employed professionals (under 1 per cent) and others (8.9 per cent).[24] There is great diversity in terms of size and regularity of income, savings potential and overall awareness of the need for and ability to save for retirement.[25] This poses serious challenges in achieving pension penetration: schemes have to be structured to enable workers in varying occupations with different income security levels to save for their retirement. The NPS permits any individual to voluntarily join scheme. The PFRDA would therefore need to devise appropriate regulations and schemes to encourage voluntary participation from both the organised and the unorganised sectors. The potential for voluntary NPS participation is large.[26] But this will require social marketing, and considerable education and development effort. Confidence in the professionalism and competence of the PFRDA will be the key.

A modest increase in coverage may be obtained if the EPFO demonstrates the capacity to efficiently administer, and introduces modern investment management and governance

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22 Requirements by the Social Security Administration in the US to mandatorily commission actuarial studies spanning 75 years projections, and making them publicly available through the internet are instructive in this regard. Moreover the OECD (Organization for Economic Co-operation and Development) undertakes regular comparative analysis of the impact of social security schemes in the member countries. The contrast with the lack of information about projections of public sector pension schemes in India; and not-easily accessible and often patchy EPFO annual reports is rather striking.

23 For elaboration on CRA, POP and selection of pension fund managers, see Shah (2005).

24 Source: AC Nielsen and ORG MARG National Data Survey Snapshots on Pension Reform for the Informal Sector in India, 2005, available at http://www.finmin.nic.in/stats_data/ pension_data .

25 In fact, the time may have come to drop the classification of ‘unorganized’ sector for the purpose of pension scheme design and realize that individual sub-categories within this class are too heterogeneous to be combined in this manner. This is also indicated by the A.C. Neilson –ORG MARG survey mentioned in endnote 21.

26 A Hong Kong based financial institution has estimated that by 2015, there are likely to be 8.6 million mandatory members of the NPS, with accumulated balances of US$26 billion (Cashmore et al., 2005).

structures. Currently, only establishments employing 20 or more employees are covered by the EPFO. But if it reforms, this can be progressively reduced to 10 employees. This may increase the membership base by perhaps 4 to 5 million. This is modest in relation to India's labor force, but is significant in terms of absolute numbers. The trade unions therefore have a direct stake in EPFO reforms. Reforms aimed at modernising EPFO's organisational and governance structures would also end the practice of members withdrawing accumulated balances when changing jobs, and reduce the workload generated by such provision. EPFO's aim should be to make its operations consistent with long- term retirement financing institution rather than continue to operate essentially as a savings bank as is the case currently.

Two options for expanding coverage to include the unorganised sector were discussed earlier. It is worth emphasising that social insurance however is a complex concept. The economics of life insurance and pensions are impacted in a diametrically different manner when life expectancy increases. The cost of the former goes down, while the cost of pensions and health care increases substantially. Moreover, the actuarial calculations relevant for pensions and for health insurance are very different, requiring robust and constantly updated databases and expertise in analysing. The social insurance schemes need to be sustainable for over 70 years. Some of the benefits such as unemployment insurance and health insurance are not available to most in the organised sector. The report will vastly increase the demand for health care services and for pensions, but does not give due consideration to the supply side factors, particularly in the health sector.

Longevity and Inflation Risks

Adequate retirement provision requires addressing these risks. Traditionally, in the industrial countries, mandatory social insurance schemes covering most of the labor force have addressed these risks fairly satisfactorily, and have also provided disability and survivors' benefits. In a DC scheme such as the NPS, these risks are not addressed in the current design. Thus, high priority must be given to risk sharing arrangements between individual members, insurance companies, and the governments for addressing these risks in an affordable and sustainable manner. This is especially important in view of the mandatory annuity provision of the NPS. This issue is also of major importance in the DC schemes of the developing countries (Impavido, et al. 2003).

EPFO's pension scheme (EPS) does not have inflation risk sharing mechanism, but its benefits do address longevity risks. However, even the current benefits are unsustainable as EPS is severely under-funded (see footnote 16). So before addressing inflation risks, the EPS scheme will need a thorough reform, including substantial reduction in the replacement rate (the promised 50 per cent rate is not sustainable), and modern investment management and administration.

In addition to longevity and inflation risks, the NPS will need to incorporate disability and survivors' benefits. This can be done through a group insurance scheme, with the premiums paid from the contributions to the NPS. Following the international practice, the cost should be borne by the members.

Tax Arrangements

The 2005–06 budget of the Central government has restructured the Income Tax Act (1961) to reflect modern concepts of savings and tax incentives. Tax rebates on life insurance provident fund and pension fund products, that were available under Section 88 of the act, have been abolished. Concurrently, Section 80L of the same act, which provides for deduction up to Rs 15,000 for interest earned from government securities, National Savings Certificates (NSC) and interest on Public Sector Undertakings (PSU) bonds has been

omitted. It is expected that these and other sections pertaining to tax rebates or deductions on savings will be combined together, in order to bring in uniformity in tax treatment for all savings instruments. A simplified income tax slab structure, including much higher initial exempt levels of Rs 1.25 lakh for women, Rs 1.5 lakh for senior citizens and Rs 1 lakh for others has been proposed. However, such differential levels of exemption complicate tax administration and need to be minimised.

It is expected that the investment in pension products purely for tax shelter purposes will be reduced with these measures. Specifically, the attractiveness of EPFO as a tax shelter will be considerably diminished.[27] Consequently EPFO will be increasingly compared with other PFRDA-regulated schemes in terms of service quality and professionalism, and be pushed to achieve better standards of performance. This implies that greater urgency is needed in modernising EPFO governance and organisational structures.

This move is also intended to take the tax structure for pensions towards the international best practices of 'EET' model — exempt (E) from personal income tax during contribution, exempt (E) for accumulation and taxed (T) during withdrawal. The budget has proposed the setting up of an Expert committee on operationalisation of the EET system for provident and pension funds sector and presumably for other savings as well. PFRDA schemes are already on the EET system, and such treatment needs to be extended to others such as the EPFO schemes, to ensure level and equitable treatment as well as for widening the tax base. Indirectly, tax reforms will encourage the growth of the new civil service and unorganised sector pension scheme set up in January 2004.

5.5 Concluding Remarks

India's open-economy, open-society paradigm requires inclusive growth to manage globalisation in a sustainable manner. A well functioning social security system, with increasing coverage of the population and types of risks addressed is an important element of inclusive growth. Demographic trends, with large number of young coming into the labor force, need for fiscal consolidation and flexibility and need for greater labor market mobility are also adding urgency to social security reforms in India. The analysis in this chapter suggests that the social security system which has evolved since independence is fairly complex, but suffers from severe limitations.

First, the core-functions are not being performed by the existing provident and pension fund organisations in both private and public sectors with requisite degree of professionalism. This will also require revamping of social security laws, and regulations as well as organisational structures.

Second, there is a lack of systematic perspective reflected in lack of coherence and capabilities of those regulating different components of the social security system. The New Pension Scheme (NPS) initiated in January 2004, representing a decentralised and scalable approach, is still to be made fully functional. In particular, the current coalition government has been unable to persuade some of its own partners to pass the PFRDA Bill introduced in the Parliament in 2005. This delay is acting as a constraint on the development of a pension system in which general public can have high degree of confidence, and thereby affecting

[27] Currently, employees earning up to Rs. 6500 per month contribute between 10–12 per cent of their basic pay plus dearness allowance, with a matching contribution by the employer. Those with higher starting salaries need not mandatorily join the EPFO. However, contributions higher than the mandated percentage, and contributions of those beyond the wage ceiling are also entitled to Section 88 tax benefits. As a result all EPF deposits offer a tax-free assured 8.5 per cent nominal rate of return. This does not benefit the poor worker as much as the salaried and savings-surplus strata, which uses the EPFO as a lucrative investment avenue. Data on distribution of EPF supports this premise: As on 31 March 2004, 85 per cent of the contributors had an average balance of Rs.3133 only, and a mere 3.6 per cent of contributors had total EPF balances exceeding Rs.100,000.

their interest. The government is planning a separate Bill for those who want to voluntarily join the NPS, and to enable PFRDA to regulate occupational pension funds.

Third, the level of financial economics in general and pension economics in particular, remains low, even among trustees of provident and pension funds. The developmental role of PFRDA, is terms of financial education, needs to be undertaken with much greater urgency.

Fourth, the social assistance programs for the elderly suffer from lack of funds resulting in low level of assistance and coverage provided. Thus fiscal reforms at all levels of government and improvement in government delivery systems are essential to provide minimum old age support.

Finally, robust database, pension research capabilities and empirical-evidence based policies required to enhance effectiveness of current policies and to reform them, are in short-supply. Analytically rigorous and policy relevant research is essential for building a modern social security system in India.

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PART III

INDIA’S EXTERNAL SECTOR

6

Export Performance in the Reform Era: Has India Regained the Lost Ground?

Prema-chandra Athukorala

During the first four decades of the post-independence era India continued to remain an underperformer in world export markets, relative to both her own potential and the performance of many other developing countries. The consensus of the sizeable literature on this subject is that domestic economic polices, rather than external demand conditions, were largely to be blamed for the poor export performance.[1] The overriding aim of the Indian development policy from the inception was across-the-board import substitution in the context of a foreign trade regime which relied extensively on quantitative restrictions (QRs). Until about the mid-1970s the overall policy trend was towards tightening controls on both foreign trade and domestic industry. The pull of resources into import-substitution industries by the high level of protection, plus overvaluation of the real exchange rate resulting from upwards shift in demand for imports and a rate of domestic inflation above that of trading partners, discouraged production for export. Also, the inflexibilities created by the pervasive controls on domestic manufacturing handicapped the ability of firms to penetrate export markets.

As a reaction to the foreign exchange constraint on economic growth, export promotion was recognized as a policy goal in the late 1960s, but export performance continued to be constrained fundamentally by 'the inward-looking framework in which exports are treated essentially as an after thought' (Wolf, 1982: 12). Also, the export incentives granted were concentrated on a few manufacturing sectors and most agricultural exports were not eligible for these incentives but subjected to export duties at varying rates. Some liberalization took place during 1975–1991, especially during the last five to seven years, including progressive loosening of import controls and increase in subsidies to exporters of manufactured goods. However, in the absence of significant policy initiatives to redress exchange rate overvaluation and domestic industrial licensing, the policy bias against export performance remained virtually unchanged (Joshi and Little 1994). Thus, sluggish export growth continued to act as a drag on economic growth, both by impairing capacity to import developmental imports and by limiting the expansion of domestic industry to the confine of the domestic market. The Growth was not merely low but also distorted; failure to penetrate word markets in labour-intensive products infused an undue capital-intensity bias to domestic manufacturing, with adverse implications for employment generation, income distribution and poverty alleviation (Bhagwati, 1993).

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[1] The first systematic analysis of India's export performance and potential, which cogently argued that India's export stagnation was largely 'home made' was by Manmohan Singh (Singh 1964). Since then, there have been a number of other important analyses in the same vein, reinforcing the view that India's exports could be significantly increased through policy reforms and poor export performance was a significant factor in India's lack-luster economic performance in general (for example, Wolf, 1982, Bhagwati and Desai, 1970, Bahagwati and Srinivasan, 1975, Krueger, 1975, Joshi and Little, 1994 and 1996).

The liberalisation-cum-structural adjustment reforms initiated in 1991 marked a clear departure from the dirigiste past (Joshi and Little, 1996; Krueger and Chinoy, 2002, Srinivasan and Tendulkar, 2003, World Bank, 2000). How far has this policy turnaround been successful in recovering India's lost ground lost in export trade? How does India's performance compare with that of other countries? In particular, how well India has succeeded in diversifying into dynamic export products? Are the emerging export patterns in line with India's comparative advantage ('pro-poor')?, This Chapter aims to shed light on these and related issues by examining export performance of India in the reform era against the backdrop of pre-reform experience and compared with China and of other major developing countries.

The chapter begins with a survey of export trends by dividing the post-independence period into four sub-periods, each of which marked by distinctive shifts in policy regimes: the immediate post-independence period characterised by liberal trade and investment policies, the era of economic dirigisme from the early 1960s, the period of reforms by stealth from the late 1970s and the era of significant liberalization reforms since 1991. This is followed by an analysis of comparative export experience by major commodity categories, changing revealed comparative advantage in world trade and factor-intensity characteristics of the emerging export patterns. The final section draws policy inferences, with a focus on the contemporary debate on the feasibility and the desirability (from the view point of laying a solid foundation for achieving sustained, equitable growth) of bypassing the stage of labour-intensive export expansion.

6.1 Export Trends

India's merchandise exports grew (in current US$ terms) at an annual arte of about 5 per cent in the first there decades of post-independent period in a context whether world export was expanding at an annual rate of over 10 per cent. Consequently India's share of world none-oil exports fell persistently from 2.3 in the 1950s to 0.6 per cent in the 1970s (Table 6.1).[2] Notwithstanding some selective measures introduced to ameliorate the anti-export bias, India's export growth rates continued to remain below world trends in the 1980s, and India's share world market share fell to an average level of 0.5 per cent.

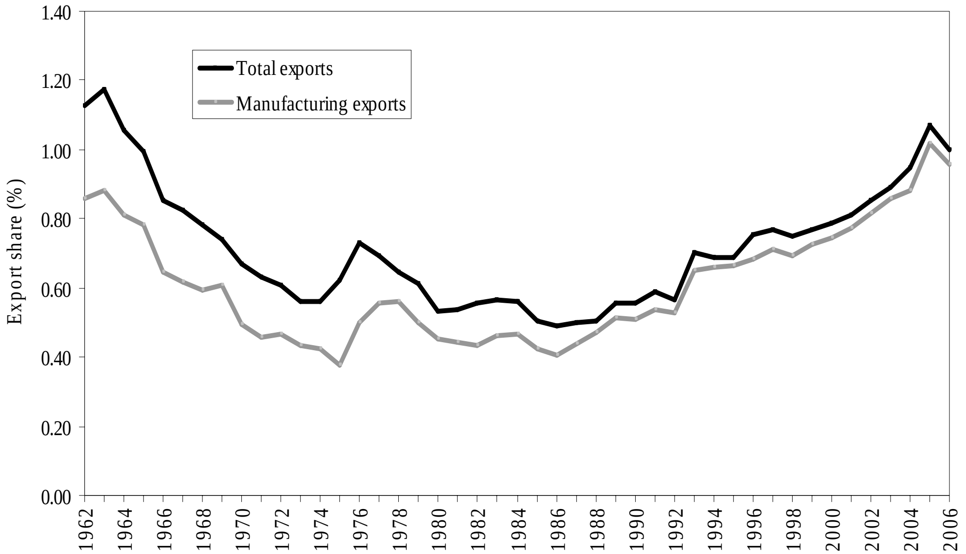
As can be seen in disaggregated data reported in Panel c in Table 1, the fall in India's share in total exports from developing countries during the period was much sharper (from 3.2 in the 1960s to 1.5 per cent during the 1980s) compared to the fall in her share of total world exports. Moreover, India's failure to keep up with overall export performance of other developing countries is much more clearly visible in manufacturing trade; India share in total manufacturing exports from developing countries plummeted from 10.2 per cent in the 1960s to 2.6 per cent in the 1980s (Figure 6.1). In 1962/3 (the earliest years for which comparable country-level data are available) India was the second largest exporter of manufactured good in the developing world (accounting for 17.8 per cent of exports) after Hong Kong (19.8 per cent) (Table 6.2). The ranking dropped to the 9th position in 1979/80, when India accounted for only 4.3 per cent of total manufacturing exports from developing countries. By the time of 1991 reforms, India was the tenth largest exporter (2.6 per cent) after the Philippines (2.9 per cent) and India's export share amounted to less than one eighth of that of China (25.5 per cent). The degree of export orientation of the economy, measured by exports to GDP ratio, remained virtually unchanged around 6 per cent throughout the 1970s and 1980s (Figure 6.2).

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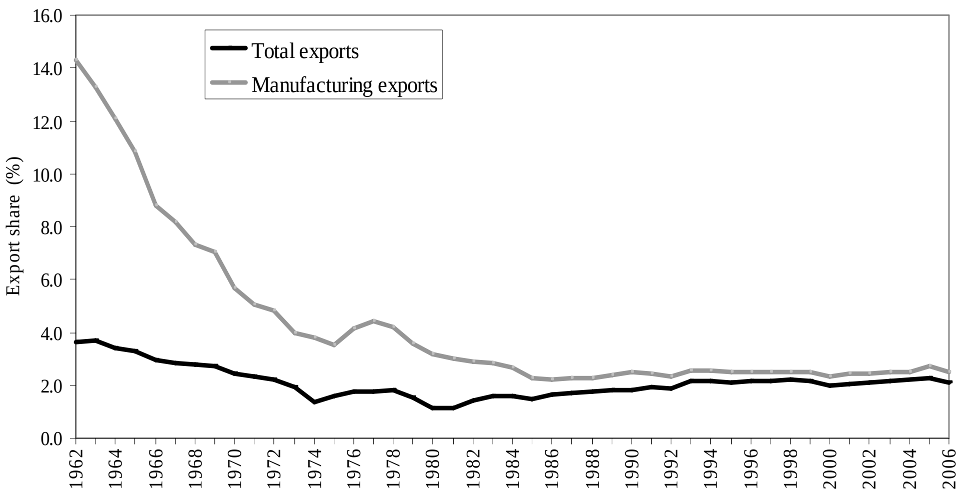
[2] In 1948, India's share of world merchandise exports (2.2 per cent) was five times of that of Japan (0.4) (Srinivasan and Tendulkar, 2003: 2).

Figure 6.1: India's Share in Total World Exports and Exports from Developing Countries, 1962–2006[1]

(a) Total World Exports



(b) Exports from developing countries



Notes: 1 Total merchandise exports net of oil and gas.
2 Developing countries are identified on the basis of the standard UN definition

Source: Based on data compiled from the UN Comtrade database

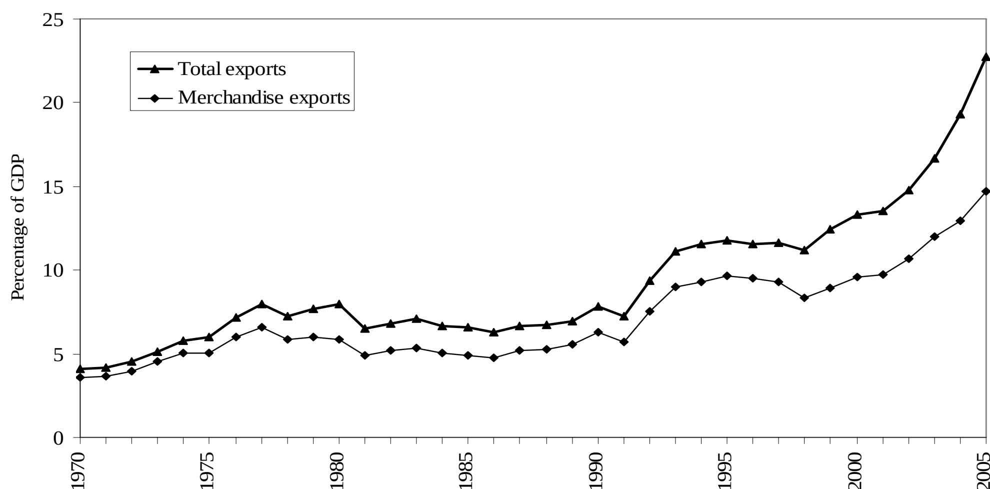
Table 6.1: Key Indicators of India's Export Performance, 1950–2005

	1950–59	*1960–69*	*1970–79*	*1980–89*	*1990–99*	*2000–05*	*1991–05*
(a) Annual average export growth#							
Total (merchandise + services) exports	---	7.1	7.3	7.9	9.9	21.2	14.2
Merchandise exports	5.1	4.6	6.8	8.1	8.9	18.9	12.6
(b) Exports as a percentage of GDP							
Total (merchandise + services) exports	---	---	5.6	6.3	10.1	15.5	12.2
Merchandise exports	6.3	4.2	4.7	4.8	7.9	10.5	9.1
Services share in total exports	---	---	15.9	23.3	20.8	30.0	24.6
(c) India's share in,							
World merchandise exports	2.3	0.9	0.6	0.5	0.7	0.9	0.7
World manufacturing exports	---	0.7*	0.5	0.5	0.6	0.8	0.7
Merchandise exports from developing countries	---	3.2*	1.9	1.5	2.1	2.1	2.0
Manufacturing exports from developing countries	---	10.2*	4.3	2.6	2.5	2.5	2.3

Notes: # Based on current US$ value
* Average for 1962–69.
--- Data not available

Source: Compiled from IMF, *International Financial Statistics* database and UN, *Comtrade* database.

Figure 6.2: Export Orientation of the Indian Economy: Exports as a percentage of GDP, 1970-2005



Source: Based on data compiled from IMF, *International Financial Statistics* database.

The Indian economy began to record higher growth in both services and merchandise exports following in the reform era. Merchandise exports grew at an average annual rate of 12.6 per cent during 1991–05 compared to 8.1 per cent in the 1980s. Total exports (merchandise + service) grew at a faster rate (14.2 per cent) reflecting faster growth of services. The degree of export orientation of the economy increased from 6.1 per cent in the 1980s to 12.2 per cent during 1991–05. Export growth and the degree of export orientation were much faster in the first five years of the new millennium compared to the previous decade. Rapid services growth largely emanated from the information technology sector and business related information services (Desai, 2000; Saxsenian, 2000). Services share in total exports increased from 15.9 per cent in the 1970s to 23.3 per cent in the 1980s and then to 24.6 per cent during 1991–05.

India's share in total world merchandise trade, which had persistently declined over the past for decades reaching a historical low of 0.50 per cent in the mid 1980s, recoded a modest, but persistent recovery from the early 1990s, reaching 1 per cent mark in 2005 (Figure 6.1a). However, as yet there has not been any noticeable increase in India's share in developing country exports, both total merchandise exports and manufactured exports. These shares have hovered between 2 per cent to 2.5 per cent without showing any discernable trend (Figure 6.1b). Between, 19990/00 and 2005/06, India's ranking in manufactured exports among developing countries improved marginally from 10th to 8th, but her market share (2.7 per cent) amounted to less than one fifteenth of that of China (38.1) (Table 6.2). Overall, India's modest market share gains in recent years have been at the expense of exports from developed countries. There is no sign that the reform processed had contributed to improving India's export competitiveness vis-a-vis the other developing countries.

Table 6.2: Manufacturing Exports from Developing Countries: Ranking of the Top Ten Exporting Countries in Ascending Order of Export Value, 1962/63, 1979/80, 1999/00 and 2005/06[1]

1962/63		*1979/80*		*1999/00*		*2005/06*	
Country	*Share (%)*	*Country*	*Share (%t)*	*Country*	*Share (%t)*	*Country*	*Share (%t)*
Hong Kong	19.8	Taiwan	15.9	China	25.5	China	38.1
India	17.8	Hong Kong	13.0	Taiwan	11.0	Korea	10.2
China	9.5	Korea	12.7	Korea	10.8	Taiwan	8.6
Yugoslavia	5.8	China	7.3	Mexico	9.2	Mexico	6.1
South Africa	5.2	Brazil	5.6	Malaysia	6.6	Malaysia	5.1
Mexico	4.1	Singapore	4.9	Singapore	5.9	Singapore	4.2
Taiwan	3.6	Mexico	4.6	Thailand	4.0	Thailand	3.6
Pakistan	2.6	South Africa	4.3	Hong Kong	3.9	India	2.7
Singapore	2.1	India	4.3	Philippines	2.9	Brazil	2.3
Iran	2.1	Yugoslavia	3.2	India	2.6	Turkey	2.2
Total	72.7		75.7		82.4		83.3

Note: 1 Two-year averages

Source: Compiled from UN Comtrade database.

6.2 Export Patterns

In this section India's export performance is examined from a comparative regional (Asian) perspective against the backdrop of pre-reform experience and the on-going changes in patterns of international production. The relevant data are summarized in Tables 6.3 and 6.4.

Rapid export growth in developing Asian countries over the past three decades has been underpinned by a pronounced shift in export structure away from primary commodities and toward manufactures (Table 6.3). By 2005/06 manufactures accounted for 92 per cent of total exports from these countries, up from 78.3 per cent three decades ago. Given the nature of their resource endowments, the four Asian NIEs (Hong Kong, Taiwan, Korea, and Singapore) relied very heavily on manufacturing for export expansion from the very beginning. However, beginning in the 1970s, a notable shift towards manufacturing is observable across all countries, at varying speeds and intensity. The share of manufactured in the export composition of India increased from 57.8 per cent in 1979/80 to 72 per cent in 1989/90 and to 78.1 per cent in 2005/06. This structural shift, though noteworthy, is far less dramatic compared to the experiences of dramatic compared to all second-tier exporting countries[3] in the region, particularly when we take into account the fact that historically India had a relatively well established manufacturing base to begin with (Wolf, 1983).

Developing Asia's share in total world manufacturing exports increased from 19.5 per cent in 1979/80 to 36.6 per cent in 2005/6. India still accounts for a tiny share, around 1 per cent, at the end of the period. China's rise has been the key factor behind the rapid growth of manufacturing exports from developing Asia, but exports from Taiwan, Korea, and the ASEAN countries have also recorded impressive growth.

Within manufacturing, machinery and transport equipment (SITC 7, henceforth referred to as 'machinery' for short) has been the prime source of export dynamism in China and the other East Asian countries over the past two decades. Information and communication technology (ITC) products have the dominant category with machinery exports. In all East Asian countries listed in Table 6.3, machinery category accounted for nearly half or more of total manufacturing exports by 2005/06, with ICT product accounting for over two-thirds of exports of within machinery group. By contrast, the share of machinery in manufacturing exports from India in 2005/06 amounted to a mere 11 per cent, and ICT products accounting for a mere 4 per cent. Clearly, India's much talked about high-tech bias in domestic manufacturing has not yet begun to reflect in her export structure. India's export structure is notable for its heavy reliance on resource-based manufacturing (SITC 6) which accounted for nearly a half of total manufacturing exports in 2005/06.

3 This term is used to refer to the dynamic exporting countries in East Asia other than the four newly-industrialized economies (NIEs) (Korea, Taiwan, Hong Kong and Singapore).

Table 6.3: Commodity Composition of Merchandise Exports[4] (%)

		Primary products[4]				*Manufacturing*							
Country/ country group		*Total*	*Food & beverages (SITC 0+1)*	*Minerals[4] (SITC 2+68)*	*Agri. Raw material SITC 4*	*Total*	*Chemicals (SITC 5)*	*Resource-based products (SITC 6)*	*Machinery & transport equipment[5] (SITC7)*	*ICT products*	*Miscellaneous manu-facturing[6] SITC8*	*Clothing & footwear (SITC 84 + 85)*	*Total*
Developing	1979/80	35.0	13.7	18.7	2.7	63.0	2.9	20.4	15.6	12.5	26.3	5.5	100
Asia[1]	1989/90	16.6	8.2	7.5	0.9	82.1	3.4	15.4	32.1	25.3	25.2	16.0	100
	2005/06	6.7	2.8	3.3	0.6	91.9	6.1	12.4	53.2	44.3	20.0	8.2	100
India	1979/80	41.6	24.8	15.9	1.0	57.7	2.6	40.0	8.1	0.0	14.6	11.4	100
	1989/90	27.8	14.2	12.7	0.9	71.9	4.1	42.8	4.8	1.2	20.7	17.0	100
	2005/06	20.6	7.6	12.6	0.4	78.1	13.1	35.5	11.5	3.9	20.0	12.7	100
China	1979/80	39.4	23.8	15.1	0.5	60.1	7.8	29.8	3.5	1.2	20.1	2.0	100
	1989/90	20.0	10.9	9.0	0.2	79.4	5.4	17.6	13.2	9.3	44.2	24.3	100
	2005/06	4.4	2.2	2.1	0.0	94.9	3.6	13.9	48.3	41.5	30.3	12.5	100
Korea	1979/80	11.0	7.9	2.9	0.1	88.3	3.3	23.6	16.3	13.8	29.6	27.1	100
	1989/90	6.2	4.2	2.0	0.0	92.9	3.1	18.7	35.8	26.2	36.0	24.6	100
	2005/06	3.6	0.9	2.7	0.0	95.2	9.9	13.7	64.1	42.3	9.0	1.0	100
Taiwan	1979/80	12.5	9.8	2.7	0.0	86.9	3.0	24.4	23.6	17.0	36.2	11.4	100
	1989/90	8.3	5.8	2.5	0.0	90.9	3.0	17.0	38.6	27.3	0.0	5.1	100
	2005/06	3.5	0.9	2.7	0.0	94.9	8.9	14.2	60.0	50.8	0.0	0.1	100
Indonesia	1979/80	92.3	25.8	63.9	2.6	7.4	1.6	4.6	1.2	1.0	1.2	0.1	100
	1989/90	47.8	17.5	27.3	3.0	51.8	2.3	34.7	1.3	0.8	18.2	14.1	100
	2005/06	34.1	7.9	19.8	6.4	62.7	6.0	18.0	24.5	19.7	17.6	10.5	100
Malaysia	1979/80	75.0	5.3	56.6	13.1	24.3	0.8	14.4	14.5	13.2	3.3	0.5	100
	1989/90	38.7	5.5	26.7	6.4	60.0	2.5	8.6	39.1	36.1	11.6	7.2	100
	2005/06	10.1	2.0	4.1	4.0	88.4	5.1	6.4	69.7	66.3	8.0	2.2	100
Phillipines	1979/80	65.5	24.6	31.0	9.9	32.9	1.2	8.4	10.6	9.7	14.3	1.6	100
	1989/90	37.1	18.1	15.2	3.8	61.6	2.6	9.0	23.9	22.6	29.6	19.0	100
	2005/06	10.1	4.7	4.4	1.0	88.2	1.0	4.0	75.3	71.9	9.2	4.4	100
Singapore	1979/80	18.1	5.1	10.4	2.7	69.8	4.7	11.1	41.1	32.6	13.8	1.5	100
	1989/90	6.2	2.7	3.1	0.4	89.8	6.9	5.3	67.3	58.1	10.9	4.0	100
	2005/06	3.0	1.5	1.3	0.2	93.2	19.3	3.6	63.3	55.2	7.3	0.3	100
Thailand	1979/80	72.5	45.8	26.6	0.0	27.1	1.3	22.5	6.1	5.3	6.5	0.3	100
	1989/90	38.7	30.5	8.0	0.1	60.6	1.5	13.5	22.1	18.2	24.1	11.9	100
	2005/06	16.0	10.4	5.5	0.1	81.3	7.3	10.8	50.9	37.2	12.8	4.8	100
Vietnam	1979/80	73.1	39.7	32.9	0.5	26.7	1.7	8.1	3.1	0.6	15.0	1.2	100
	1989/90	85.6	55.1	30.2	0.3	14.4	0.7	6.5	0.7	0.6	6.8	4.3	100
	2005/06	25.2	21.5	3.8	0.0	74.1	1.8	7.8	13.3	9.3	51.4	37.6	100
Sri Lanka	1979/80	70.5	51.7	15.9	2.9	26.9	0.6	11.5	0.8	0.4	14.1	13.7	100
	1989/90	30.5	20.9	8.3	1.3	69.0	1.1	20.7	1.2	0.8	46.0	43.1	100
	2005/06	23.5	16.3	5.4	1.8	75.9	1.1	17.2	5.2	2.7	54.3	50.6	100
Bangladesh	1979/80	30.2	13.9	16.3	0.0	60.5	0.4	59.2	0.2	0.1	0.8	0.1	100
	1989/90	19.5	15.3	4.2	0.0	81.0	0.7	28.4	0.4	0.3	51.5	51.1	100
	2005/06	6.3	4.9	1.4	0.0	93.4	1.4	8.4	0.9	0.3	82.7	82.0	100
Pakistan	1979/80	41.1	23.6	17.5	0.0	58.3	0.6	47.5	1.5	0.2	8.9	2.3	100
	1989/90	22.5	8.3	14.2	0.0	77.4	0.5	53.7	0.6	0.3	22.5	17.6	100
	2005/06	12.6	9.2	3.4	0.0	86.5	2.5	52.1	1.1	0.3	31.9	26.0	100
Developing	1979/80	65.8	40.0	24.5	1.3	30.7	4.5	22.0	10.2	4.0	8.0	1.3	100.
Countries[2,3]	1989/90	45.9	25.2	20.1	0.5	51.2	7.6	24.2	20.7	8.4	14.8	10.1	100
	2005/06	27.7	12.6	14.8	0.3	66.0	9.8	25.3	31.4	13.1	14.3	8.1	100
Developed	1979/80	27.0	13.2	13.2	0.5	70.1	10.8	20.7	31.5	8.0	10.3	1.3	100
countries[2,3]	1989/90	21.4	10.8	10.3	0.4	76.1	11.8	18.6	36.3	11.5	12.3	2.7	100
	2005/06	15.0	7.9	6.8	0.3	81.1	16.8	15.3	40.8	12.7	10.7	1.5	100
World	1979/80	27.1	13.1	13.3	0.7	70.5	9.3	21.5	32.1	9.0	11.1	1.5	100
	1989/90	19.2	9.5	9.3	0.4	78.4	9.8	18.0	39.2	14.5	14.0	4.5	100
	2005/06	14.0	6.7	6.8	0.4	82.1	12.5	15.6	42.9	21.1	13.4	4.0	100

Notes: 1. Countries is South, Southeast and East Asia Excluding Japan; 2. Excluding Asian developing countries; 3. Based on the UN country classification; 4. Excluding oil and gas; 5. Including ICT products; 6. Including clothing and footwear; --- Data not available; ICTInformation and communication technology products (SITC 75+76+77)

Source: Compiled from UN Comtrade database.

Table 6.4: Share in World Manufacturing Exports, 1979/80, 1989/90 and 2005/06 (%)

Country/ country group		*Total*	*Chemicals (SITC 5)*	*Resource-based products (SITC 6)*	*Machinery & transport equipment[4] (SITC7)*	*ICT products (SITC 75+ +76+ 77)*	*Miscellaneous manufac-turing[5] SITC8*	*Clothing & footwear (SITC 84 + 85)*
Developing	1979/80	8.0	2.7	9.4	4.1	11.5	20.5	31.2
Asia	1989/90	12.8	4.2	11.3	9.5	20.2	27.6	47.8
	2005/06	28.8	13.1	22.2	30.8	51.9	41.6	57.3
India	1979/80	0.5	0.2	1.1	0.1	0.0	0.8	1.4
	1989/90	0.5	0.2	1.3	0.1	0.0	0.8	2.1
	2005/06	1.0	1.1	2.3	0.3	0.2	1.5	3.2
China	1979/80	0.9	0.8	1.4	0.1	0.1	1.8	1.3
	1989/90	1.8	1.0	1.8	0.6	1.2	5.7	9.7
	2005/06	13.7	3.4	10.5	13.4	23.4	26.8	37.6
Korea	1979/80	1.6	0.4	2.0	0.6	1.9	4.0	7.6
	1989/90	2.6	0.7	2.3	2.0	3.9	5.6	11.8
	2005/06	3.6	2.4	2.7	4.6	6.2	2.1	0.8
Taiwan	1979/80	2.0	0.5	1.9	1.2	3.1	5.4	12.6
	1989/90	2.9	0.8	2.4	2.5	4.7	0.0	2.8
	2005/06	3.1	1.9	2.5	3.8	6.6	0.0	0.1
Indonesia	1979/80	0.1	0.1	0.1	0.0	0.1	0.1	0.0
	1989/90	0.3	0.1	0.9	0.0	0.0	0.6	1.5
	2005/06	0.7	0.4	1.0	0.5	0.8	1.1	2.3
Malaysia	1979/80	0.3	0.1	0.7	0.4	1.5	0.3	0.3
	1989/90	0.8	0.2	0.5	1.0	2.5	0.8	1.6
	2005/06	1.8	0.7	0.7	2.8	5.4	1.0	0.9
Philippines	1979/80	0.2	0.1	0.2	0.2	0.6	0.7	0.6
	1989/90	0.3	0.1	0.2	0.2	0.6	0.8	1.5
	2005/06	0.7	0.1	0.2	1.2	2.3	0.5	0.8
Singapore	1979/80	0.6	0.3	0.3	0.8	2.1	0.7	0.6
	1989/90	1.2	0.8	0.3	1.8	4.3	0.8	0.9
	2005/06	1.5	2.0	0.3	1.9	3.4	0.7	0.1
Thailand	1979/80	0.2	0.1	0.5	0.1	0.3	0.3	0.1
	1989/90	0.6	0.1	0.6	0.4	1.0	1.3	2.0
	2005/06	1.3	0.8	0.9	1.5	2.3	1.2	1.6
Vietnam	1989/90	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2005/06	0.3	0.0	0.2	0.1	0.1	1.2	2.9
Sri Lanka	1979/80	0.0	0.0	0.0	0.0	0.0	0.1	0.6
	1989/90	0.1	0.0	0.1	0.0	0.0	0.2	0.6
	2005/06	0.1	0.0	0.1	0.0	0.0	0.3	0.9
Bangladesh	1979/80	0.0	0.0	0.1	0.0	0.0	0.0	0.0
	1989/90	0.1	0.0	0.1	0.0	0.0	0.2	0.7
	2005/06	0.1	0.0	0.1	0.0	0.0	0.8	2.6
Pakistan	1979/80	0.1	0.0	0.3	0.0	0.0	0.1	0.2
	1989/90	0.2	0.0	0.5	0.0	0.0	0.3	0.6
	2005/06	0.1	0.0	0.5	0.0	0.0	0.3	0.9
Other	1979/80	3.2	3.6	7.6	2.3	3.3	5.3	6.7
Developing	1989/90	4.3	5.0	8.8	3.4	3.8	6.8	14.5
Countries[1.,3]	2005/06	10.4	10.1	20.9	9.5	8.0	13.8	26.4

Notes: 1. Excluding Asian developing countries; 2. Excluding Japan; 3. Based on the UN country classification; 4. Including ICT products; 5. Including clothing and footwear. --- Data not available; ICT = Information and communication technology products (SITC 75+76+77).

Source: Compiled from UN Comtrade database.

The fast growth of machinery exports, in particular of ICT products therein, from Asia has been driven by rapid growth of international fragmentation of production in world trade and the increasingly deep integration of East Asian countries into the global production networks that proliferated as a result of these two, more or less simultaneous developments (Athukorala, 2006b). The best available indicator of the intensity of fragmentation-based specialization in the region is the share of parts and components[4] in total recorded trade in machinery and transport equipment. These data are summarised in Table 6.5. The share of Developing East Asia (DEA) in world component exports increased from 16.5 per cent to 28.1 per cent. Within DEA, all countries covered in our data tabulations have recorded increases in world market shares, with the ASEAN countries exhibiting faster increases compared to the regional average. In countries such as Malaysia, Thailand and the Philippine components accounts for a large share of total machinery exports. Interestingly, the significant increase in the relative importance of DEA in fragmentation trade has taken place against the backdrop of a notable decline in the shares of both NAFTA and EU. However, India remains a tiny participant in the global production networks even though it has great potential to benefit from this new form of international specialisation, given the relatively low-cost and trainable labour, and its location in a region that has become the growth centre of component production and assembly in the world. In 2005/6 India accounted for a mere 0.3 per cent of component exports and 0.2 per cent of final good exports in world machinery trade.

Table 6.5: Exports of Machinery and Transport Equipment, 1989/90 and 2005/6 (%)

	Regional/country composition (%)						*Share of parts and components in total trade (%)*	
	Total trade		*Parts and components*		*Final goods*			
	1989/90	*2005/6*	*1989/90*	*2005/6*	*1989/90*	*2005/6*	*1989/90*	*2005/6*
Developing East Asia	15.4	26.1	16.5	28.4	14.7	24.2	43.9	48.2
Rep. of Korea	2.4	4.3	2.9	4.1	2.1	4.4	49.0	42.8
Taiwan	3.3	3.8	3.6	5.4	3.1	2.5	45.0	63.8
China	2.3	9.3	1.4	7.3	3.0	10.9	24.5	34.8
Hong Kong, SAR	1.0	0.7	1.4	1.0	0.8	0.5	55.6	60.4
AFTA	6.3	8.0	7.2	10.5	5.7	6.0	46.7	58.4
Indonesia	0.1	0.5	0.1	0.6	0.2	0.5	31.1	48.4
Malaysia	2.1	2.8	2.4	3.8	1.9	2.0	46.8	59.5
Philippines	0.4	1.2	0.7	2.0	0.2	0.6	73.7	73.5
Singapore	2.8	2.0	3.0	2.7	2.6	1.5	44.9	58.6
Thailand	0.9	1.3	1.0	1.4	0.9	1.3	43.0	45.7
Viet Nam	0.0	0.1	0.0	0.1	0.0	0.1	25.8	55.9
India	0.1	0.2	0.1	0.3	0.1	0.2	30.8	26.4
Oceania	0.3	0.3	0.3	0.3	0.3	0.3	39.6	43.8
NAFTA	22.4	18.1	24.5	19.7	21.0	16.7	44.9	48.4
EU 15	35.3	35.4	32.5	31.1	37.3	38.9	37.9	38.9
World	100	100	100	100	100	100	41.1	44.3
US$ billion	1379	3110	567	1378	812	1732		

Source: Compiled from UN Comtrade database

4 Henceforth, for the sake of brevity, we use the term ‘components’ in place of ‘parts and components’.

Asia's share in the other main product categories has also increased over time, though at a slower rate. Of particular interest here is the notable increase in region's share in miscellaneous manufacturing. This mostly consists of standardized labour-intensive manufactured goods, in particular clothing and footwear. China has accounted for the lion's share of this increase but, in contrast to ICT exports, the geographic participation has been broader. A number of low-wage countries in Southeast and South Asia, including Indonesia, Vietnam, India, Sri Lanka, Bangladesh, and Cambodia (not listed in the table) have all recorded impressive gains in market share. In the lead-up to the abolition of the Multifibre Arrangement in December 2004 there was much speculation in policy circles that India and China would be the biggest winners of this historic step to significantly liberalize the world textile and clothing trade.[5] However, India's market share gain over the past two years of the post-MFA era has been much smaller compared to that of China (Figure 6.3). In 2006 China accounted for nearly 30 per cent of world textile and clothing exports (up from up from 23 per cent in 2004). Comparable figure for India was 4 per cent (up from 3 per cent in 2004). India's share in world clothing exports (3.2 per cent in 2005/6) — a key indicator of early stage, labour-intensive exports — was only little more than that of Bangladesh (2.6 per cent).

Revealed comparative advantage

What are the products in which India has performed better in world markets compared to its overall export performance? Has the list of products which meet this criterion expanded or shrunk during the reform era? A useful analytical tool that helps answer these issues is the index of revealed comparative advantage (RCAI), which measures a country's relative export performance in individual product categories compared to its overall export performance in world trade (Balassa, 1965).

The RCAI of a given country (country *I*) in the export of product *j* is defined as:

$$RCAI_J^I = \frac{[X_J^I / X_J^W]}{[X_T^I / X_T^W]}$$

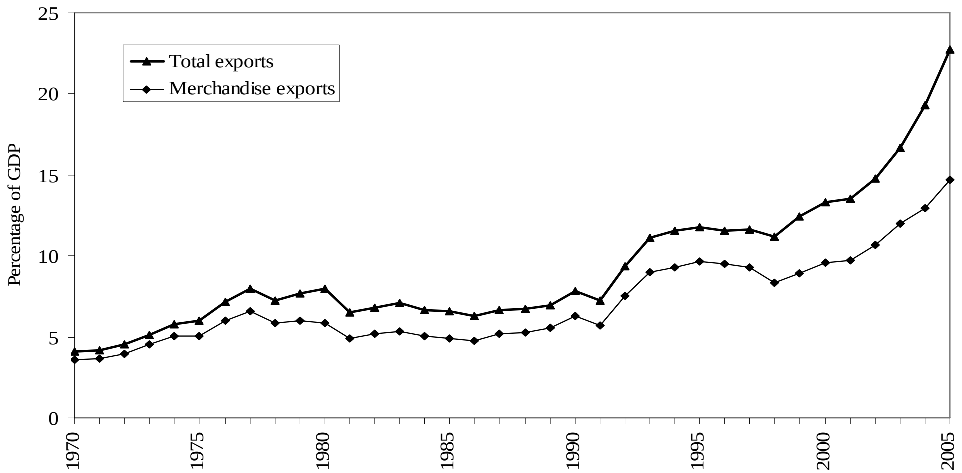
where, X_j^I is country I's exports of commodity *J*, X_J^W is world export of commodity *j*, X_T^I is total exports of all goods from country I, and X_T^W is world exports of all goods. If the value of *RCAI* exceeds unity for commodity *J*, the country is said to have 'revealed' comparative advantage in the production of that commodity. In contrast, if *RCAI* is below one, the country is at a comparative disadvantage in the production of the commodity.

We estimated RCAIs for India exports at three time points (1980/81, 1990/91 and 2004/5) using data at the 3-digit level of the Standard International Trade Classification (SITC). The analysis covers total merchandise exports excluding oil and gas (STIC 3) and special export items listed under SITC 9. In Table 6.6, RCAIs are reported together with data on percentage composition of exports and world market share of each commodity to facilitate the analysis. The table covers all three-digit products with a 'revealed comparative advantage' (that is 1<RCAI, referred to as 'RCA products' in the following discussion) in any of the three time points.

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[5] See Nordas (2004) and the work cited therein. Based on WTO modeling work, Nordas (2004) predicted that after the MFA abolition India's share in world textile and clothing exports would increase to 11 per cent and 15 per cent respectively (implying an increase in the combined share to about 12 per cent).

Figure 6.3: India and China: Share in world textile and clothing exports, 1970–2006



Source: Based on data compiled from IMF, *International Financial Statistics* database

The first impression from a comparison of RCA estimates is that the revealed comparative advantage in world trade of both countries is broad-based, unlike that of many developing countries whose strength in international exchange lies in one or a few products. This pattern is only to be expected for an economy like India with a diver resource base. However, there is no clear evidence as yet of a clear pattern of export specialization emerging; revealed comparative advantage is dispersed over a large number of products. In 1990/91 there we there were 47 RCA products which accounted for 81 per cent of total exports. The number of products increased to 61 in 2004/5, but their combined share in total exports declined to 72 per cent.

Primary products (food beverages and tobacco, agricultural raw material and mineral) have continued to occupy a relative more important position among RCA products compared to manufactured goods (products belonging to SITC categories 5 though 8). Within manufacturing, India's comparative advantage has continued to remain concentrated in domestic-resource based products (SITC 6). Traditional labour intensive manufactures (products belonging to SITC 8) occupies a relatively low position in RCA ranking, notwithstanding India's obvious comparative advantage in these product lines. None of the products belonging to machinery and transport equipment category (SITC 7), which has been the main vehicle for rapid growth in world trade, show RCA status in the India export structure in 2004/5.

Factor Intensity Decomposition of Merchandise Export

As noted at the outset, a much written-about aspect of pre-reform export performance in India is the inconsistency of export patterns in line with the country's intrinsic comparative advantage in labour intensive products. Has this pattern changed during the reform era? A definitive answer to this question can only come a systematic analysis of the link between emerging export patterns and changing factor proportions in domestic manufacturing through micro-level industrial performance data. This is beyond the scope of this study. Here we simply attempt to gain some preliminary insights by using the standard method of factor proportion decomposition of reported export pioneered by Lary (1968) and developed subsequently by Leamer (1983) and others.

Table 6.6: India's Exports[1] by 3-digit SITC Categories: Share in Total Exports, World market Share and RCA Indices[2]

		Export share (%)			*Share in world exports (%)*			*RCA index[3]*		
0/1	*Food, beverages and tobacco*	*1980/81*	*1990/91*	*2004/5*	*1980/81*	*1980/82*	*1980/83*	*1980/81*	*1990/91*	*2004/5*
25	Eggs	0.05	0.01	0.08	0.42	0.20	3.12	0.59	0.31	3.09
31	Fish, fresh & simply preserved	3.45	3.16	1.63	2.84	2.11	2.73	3.97	3.24	2.69
32	Fish, in airtight containers nes & fish preptns.	0.02	0.00	0.16	0.07	0.01	1.01	0.10	0.01	1.00
41	Wheat including spelt and meslin, unmilled	0.18	0.22	0.27	0.11	0.27	1.22	0.15	0.41	1.21
42	Rice	3.52	1.61	1.76	6.84	7.24	17.82	9.54	11.14	17.61
43	Barley, unmilled	0.05	0.00	0.00	0.12	0.00	0.02	0.17	0.00	0.02
45	Other cereals, unmilled	0.00	0.01	0.03	0.00	0.15	1.39	0.00	0.24	1.37
51	Fruit, fresh, and nuts excl. Oil nuts	2.75	1.74	0.93	2.52	1.79	1.93	3.51	2.76	1.91
54	Vegetables, roots & tubers, fresh or dried	0.47	0.48	0.54	0.52	0.51	1.31	0.73	0.78	1.30
71	Coffee	2.99	0.81	0.36	2.56	1.97	2.35	3.58	3.03	2.32
74	Tea and mate	5.83	3.07	0.46	28.76	21.86	12.59	40.13	33.65	12.44
75	Spices	1.72	0.66	0.33	15.56	9.72	10.04	21.72	14.96	9.93
81	Feed. Stuff for animals excl.unmilled cereals	2.20	2.04	1.11	2.08	2.40	3.05	2.90	3.69	3.02
121	Tobacco, unmanufactured	2.50	0.67	0.27	7.02	2.58	3.46	9.79	3.97	3.42
122	Tobacco manufactures	0.31	0.18	0.08	0.84	0.26	0.42	1.18	0.40	0.41
2 + 68	Crude materials, inedible, except fuels									
221	Oil seeds, oil nuts and oil kernels	0.47	0.37	0.37	0.57	0.66	1.36	0.79	1.01	1.34
261	Silk	0.01	0.00	0.01	1.33	0.14	1.83	1.86	0.21	1.81
263	Cotton	1.68	1.69	0.45	2.85	4.48	4.16	3.98	6.89	4.12
264	Jute	0.09	0.02	0.00	4.43	3.23	4.19	6.18	4.97	4.15
265	Vegetable fibers, except cotton and jute	0.00	0.00	0.01	0.08	0.02	1.44	0.11	0.04	1.42
266	Synthetic and regenerated artificial fibers	0.00	0.16	0.12	0.00	0.53	1.24	0.00	0.82	1.23
273	Stone, sand and gravel	0.41	0.68	0.55	3.34	5.07	8.16	4.65	7.81	8.06
275	Natural abrasives incl. industrial diamonds	0.00	0.03	0.06	0.03	0.67	4.23	0.04	1.03	4.18
276	Other crude minerals	0.63	0.27	0.20	1.37	0.94	1.69	1.91	1.44	1.67
281	Iron ore & concentrates	4.77	3.33	4.19	5.81	8.15	15.63	8.11	12.54	15.44
282	Iron and steel scrap	0.01	0.01	0.01	0.05	0.05	0.02	0.06	0.08	0.02
283	Ores & concentrates of non ferrous base metals	0.50	0.37	0.51	0.48	0.65	1.27	0.67	0.99	1.26
291	Crude animal materials, nes	0.47	0.22	0.05	3.70	1.73	0.81	5.16	2.67	0.80
292	Crude vegetable materials, nes	2.16	0.97	0.64	3.79	1.54	2.45	5.29	2.36	2.42
4	Animal and vegetable oils, fats and waxes									
411	Animal oils and fats	0.00	0.00	0.02	0.02	0.02	0.57	0.03	0.04	0.56
422	Other fixed vegetable oils	0.25	0.27	0.27	0.58	1.29	1.61	0.82	1.99	1.59
431	Anim./veg. Oils & fats, processed, and waxes	0.07	0.06	0.07	0.63	0.53	1.10	0.87	0.82	1.08
5	Chemicals and related products									
512	Organic chemicals	0.22	1.54	4.66	0.07	0.43	1.68	0.10	0.66	1.66
513	Inorganic .chemicals	0.06	0.62	0.63	0.06	0.72	1.54	0.08	1.11	1.52
531	Synthetic organic dye stuffs	0.54	1.15	0.70	2.24	3.17	5.71	3.13	4.88	5.64
532	Dyeing & tanning extracts, synthetic tanning mat.	0.01	0.02	0.03	0.42	0.80	2.10	0.58	1.24	2.08
541	Medicinal & pharmaceutical products	1.42	2.68	3.14	0.99	1.32	1.00	1.38	2.03	0.99
551	Essential oils, perfume and flavour materials	0.12	0.27	0.21	0.65	1.32	1.19	0.90	2.04	1.18
553	Perfumery, cosmetics, dentifrices, etc.	0.68	0.59	0.22	2.16	1.04	0.45	3.02	1.60	0.44
554	Soaps, cleansing & polishing preparations	0.65	0.56	0.08	2.18	1.57	0.29	3.04	2.42	0.29

6	Manufactured goods classified by materials									
611	Leather	4.16	2.13	0.74	11.03	4.36	3.14	15.39	6.72	3.10
612	Manufacture of leather	1.01	2.12	0.40	9.78	13.73	3.96	13.65	21.13	3.91
629	Articles of rubber nes	0.40	0.66	0.85	0.37	0.62	1.24	0.51	0.95	1.22
651	Textile yarn and thread	0.73	2.58	2.53	0.55	2.22	5.55	0.77	3.41	5.48
652	Cotton fabrics, woven	4.51	3.42	1.05	6.37	4.13	3.08	8.89	6.36	3.04
653	Text fabrics woven ex narrow, spec, not cotton	3.02	2.56	1.84	1.81	1.31	2.56	2.53	2.01	2.53
654	Tulle, lace, embroidory, ribbons, trimmings	0.14	0.11	0.12	0.94	0.75	1.53	1.31	1.16	1.51
656	Made up articles, wholly or chiefly of text.mat.	3.37	1.89	2.43	8.04	4.39	7.52	11.22	6.76	7.44
657	Floor coverings, tapestries, etc.	2.79	2.80	1.15	6.16	6.88	8.64	8.60	10.58	8.54
661	Lime,cement & fabr.bldg.mat. Ex glass/clay mat	0.09	0.31	0.85	0.18	0.78	4.20	0.26	1.19	4.15
667	Pearls and precious and semi precious stones	8.11	14.82	13.65	4.20	10.65	14.66	5.85	16.38	14.49
671	Pig iron, spiegeleisen, sponge iron. Etc	0.03	0.33	0.48	0.07	1.28	1.74	0.09	1.98	1.72
672	Ingots & other primary forms of iron or steel	0.02	0.17	1.22	0.03	0.19	1.66	0.04	0.30	1.65
674	Universals, plates and sheets of iron or steel	0.02	0.27	2.33	0.01	0.15	2.03	0.02	0.23	2.00
677	Iron and steel wire, excluding wire rod	0.08	0.14	0.17	0.41	0.92	2.05	0.58	1.42	2.03
678	Tubes, pipes and fittings of iron or steel	0.75	0.25	1.09	0.41	0.27	2.16	0.58	0.41	2.13
679	Iron steel castings forgings unworked, nes	0.06	0.21	0.54	0.61	1.73	5.50	0.86	2.66	5.43
682	Copper	0.05	0.03	1.23	0.05	0.03	1.88	0.07	0.04	1.86
693	Wire products ex electric & fencing grills	0.17	0.10	0.12	0.73	0.57	1.19	1.02	0.88	1.18
694	Nails, screws, nuts, bolts, rivets etc.	0.24	0.12	0.24	0.86	0.39	1.15	1.20	0.61	1.14
695	Tools for use in the hand or in machines	0.77	0.40	0.42	1.35	0.68	1.28	1.89	1.04	1.27
696	Cutlery	0.03	0.08	0.09	0.22	0.55	1.10	0.31	0.85	1.08
697	Household equipment of base metals	0.43	0.24	1.06	1.31	0.83	5.58	1.82	1.28	5.52
698	Manufactures of metal, nes	0.66	0.79	0.69	0.67	0.70	0.79	0.94	1.08	0.78
7	Machinery and transport equipment									
733	Road vehicles other than motor vehicles	0.91	0.63	0.27	1.93	1.26	0.81	2.69	1.94	0.80
8	Miscellaneous manufactured articles									
831	Travel goods, handbags and similar articles	0.27	0.85	0.61	1.10	1.95	2.28	1.53	3.00	2.25
841	Clothing except fur clothing	9.11	14.55	9.75	2.45	2.48	3.12	3.42	3.82	3.08
851	Footwear	0.00	1.06	0.90	0.00	0.71	1.39	0.00	1.10	1.37
863	Developed cinematographic film	0.21	0.04	0.02	6.51	2.41	2.56	9.08	3.71	2.53
895	Office and stationery supplies, nes	0.03	0.04	0.14	0.22	0.18	1.13	0.31	0.28	1.12
897	Jewelry and gold/silver smiths wares	0.29	1.32	4.54	0.47	1.79	9.96	0.66	2.75	9.84
	Number of products with 1 < RCA							37	47	61
	Export share of products with 1 < RCA							78.00	80.82	72..16

Notes: 1 Excluding oil and gas (SITC 3); 2 All products with measured revealed comparative advantage (that is 1 < RCA) in any of the three time points are included in the table;
3. The revealed comparative advantage (RCAI) of a given country (country *I*) in the export of product *j* is defined as:

$$RCAI_J^I = \frac{[X_J^I / X_J^W]}{[X_T^I / X_T^W]}$$

where, X_j^I is country I's exports of commodity *J*, X_J^W is world export of commodity *j*, X_T^I is total exports of all goods from country I, and X_T^W is world exports of all goods. If the value of *RCAI* exceeds unity for commodity *J*, the country is said to have 'revealed' comparative advantage in the production of that commodity. In contrast, if *RCAI* is below one, the country is at a comparative disadvantage in the production of the commodity.

Source: Compiled from UN Comtrade database.

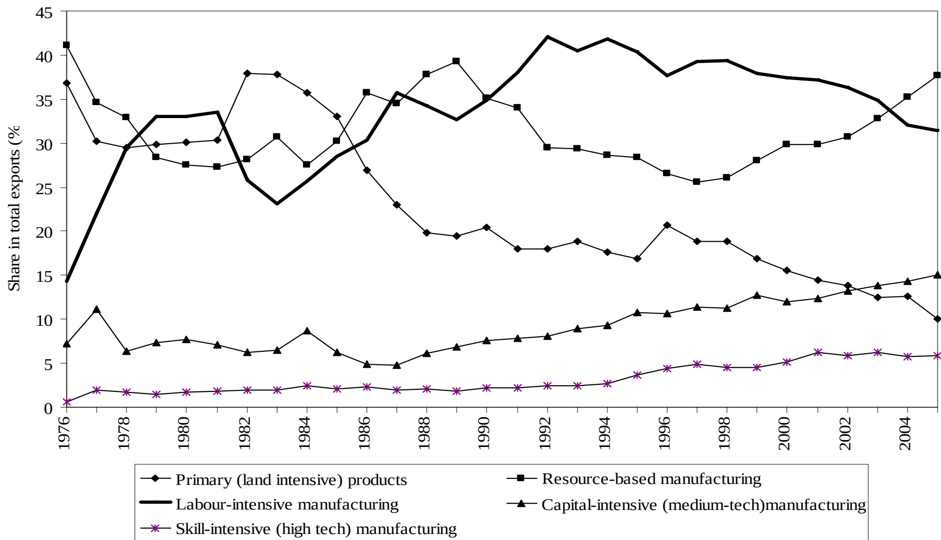
This method is based on the assumption that factor intensity rankings of industries/products are internationally consistent, that is, an industry that was relatively labour-intensive in a poor country was similarly so in a rich country. The validity of this assumption has become highly questionable because of the on-going process of international production fragmentation, which has opened up opportunities for countries to specialize in various segments of the production process within vertically integrated global industries in line with their comparative advantage. For instance a country might be exporting computers (which are classified as skill-intensive under the standard classification system) but the country is actually in involved in final assembly (a labour-intensive task) using capital- and skill-intensive parts and components imported from countries which at an advanced stage of the industrialization process. However, as we have already observed, fortunately (for the purpose of this analysis) Indian has not yet become a significant participant in fragmentation-based international division of labour. So the standard decomposition procedure still remains useful 'shortcut' to gain some sight into changing factor intensity patterns in Indian exports.

The result of our factor intensity decomposition exercise based on export data for the period 1976 to 2004 is depicted in Figure 6.4. The share of primary (land intensive) products in the export composition has declined persistently from about the early 1980s, reflecting the growing importance of manufacturing produces (the sum of the other four factor intensity categories). Within manufacturing, shares of capital-intensive (medium tech) and skill-intensive (high-tech) products have increased persistently from the mid 1980s, though from low bases, with the rate of increase accelerating over the past decade or so. The share of resource based manufacturing, which recorded a mild increased from about the late 1990s to mid 1990s, has increased persistently since then. Interestingly, the share of labour-intensive products has recorded a mild, but persistent, *decline* throughout the reform period (since 1991) compared to the previous decade. Labour intensive products accounted for 32 per cent of total exports in 2005, compared to over 40 per cent in the early 1990s. The most notable shift in the export mix during the reform era has been from land-intensive products to resource-based manufacturing. The high-tech bias in domestic manufacturing noted in a number of recent studies (Huang and Khanna, 2003; Kochhar et al., 2006; Das, 2006) has not yet become prominent on the export side.

6.3 Policy Issues

We have seen evidence of India's improved performance both in services and merchandise exports over the past one-and-a-half decades. However, it is not yet clear, particularly in the case of merchandise trade (which still account for over three-froths of total export earnings), whether the improved performance in solidly based on sustained expansion of exports with long-run growth prospects and which are in line with India's comparative advantage. Export performance during the reform era has been dominated by resource-intensive manufacturing. So far there are no clear signs of India entering into global and regional production networks in machinery and transport equipment which have been the prime mover of export dynamism in successful export-oriented economies in East Asia. Overall, India's share in exports from developing countries, which plummeted throughout the period from the early 1960s to until about the late 1980s, has remained stagnant around 2 per cent since then. Most of the mild gain in India share in total world merchandise trade has come solely from competition with exports from developed countries.

Figure 6.4: India: Factor-intensity Classification of Merchandise Exports, 1976-2005



Source: Based on data compiled from UN Comtrade database.

Notwithstanding India's comparative advantage in labour intensive production, there has been a structural shift in exports away from labour intensive products and toward resource-, capital- and skill-intensive products. In the area of labour intensive exports, India is still heavily reliant on textile and clothing. Even in this product category, India's performance has been far less impressive compared not only to China but also a number of other latecomer exporting countries in the region.

Some recent studies on India's export performance have come up with the view that the performance and patterns of Indian exports during the reform era (as summarised above), in particular India's failure so far to rely effectively on the East Asian model of labour-intensive exports as the main pillar of economic expansion, a peculiar 'Indian model' rooted in the Industrial history of the country (for example, Rodrik and Subramanian, 2005; Kochhar et al., 2006). According to this school of though, India's future growth prospects would be primarily determined by the expansion of domestic-market oriented high- and medium-tech industries, with services sectors (in particular soft-wear and IT set vices, call-centers etc.) playing the key role in export expansion. India's achievement in services exports over the past decade has of course been impressive and there is amply room for further growth in this area. However, it is not clear how India can achieve sustained equitable growth without restricting domestic manufacturing to redress its long-standing capital-intensity bias though rapid expansion of labour intensive products. Despite over ten-fold increase in output over the past decade, total (direct and indirect) labour absorption in India information technology industry is currently amount to mere 1 per cent of total employment in the country (Bardhan, 2006). Moreover, employment in information-technology services naturally has a skill-intensity bias. The only effective avenue for providing gainful employment for the vast pool of unskilled and semi-skilled labour remains the expansion of labour intensive manufacturing (Panagariya, 2006). Making the growth process equitable through employment generation is vital for the sustainability of market-oriented policy

reforms. It is ironic if the new found enthusiasm for services-oriented growth were to distract the government from undertaking necessary measures to promote export-oriented growth in traditional labour intensive industries.

The school of though which advocate a services-oriented growth strategy for India is based on the implicit assumption that India's lack-luster achievement so far in labour-intensive real-sector growth is an 'inescapable phenomenon', an outcome of various factors beyond the control of the reform process. However, there are strong reasons to argue that explanation lies in economic policies, in the incomplete reform agenda.

Relative to the first four decades following independence, India's policy reforms since 1991 have certainly achieved a great deal in unshackling the economy and integrated it into the world economy. However, there are still many unresolved problems relating to the overall investment climate in general and the anti-export bias in the policy regime in particular (Feldstein, 2006: 6; Krueger and Chinoy, 2002; Srinivasan, 1998 and 2004; Panagariya, 2006).

Despite notable tariff reforms since the early 1990s, tariff protection in India is still substantially higher than in most other developing countries in the region. While a systematic analysis of the anti-export bias in the incentive regime is yet to be done, the available data on minimal and effective rates of protection (reported in Tables 6.7 and 6.8) suggest that the incentive structure still discriminates heavily against export oriented production and in favour of domestic-market oriented production. The effective rate of protection for domestic production in India is more than twice of the average level in Indonesia, Malaysia, Philippines and Thailand. Moreover, in India, consumer goods industries, which are the basis for labour-intensive manufacturing export expansion, are generally more insulated from international competition compared to capital and intermediate goods industries. In addition to relatively tariffs, India also rank poorly among Asian countries in terms of various other indicators of ease of doing business across border (Table 6.9)

There is also a significant unfinished agenda of 'behind-the-border' reform. Regulation impacting on private sector activities has become less onerous since the start of the reforms, but there are various are sector-specific regulations in abundance. While, the 'the License Raj' (the infamous industrial licensing policy) has been largely eliminated at the centre, it still survives at the state level, along with a pervasive 'Inspector Raj'. Private investors require a large number of permissions (for example, Electricity and water supply connections, water supply clearance and so on) from state governments to start business and they also have to interact with the state bureaucracy in the course of day-to-day business. Notwithstanding some relaxation in recent years, the 'small scale industries' reservation policy, under which designated industries are reserved only for tiny companies that are unable to compete with the large firms, still remains a major constrain on the expansion of labour intensive manufacturing where India's comparative advantage in international production lies (Das, 2006).[6] Stringent labour laws and restrictive labour market practices are among other prominent issues. These issues are reflected in India's poor ranking among the countries in the region, in particular the dynamic export-oriented economies in East Asia, in terms of various indicators of ease of doing business (Table 6.10).

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[6] Clothing was removed from the reservation list in 2000. This presumable set the stage for the expansion of clothing exports from India following the termination of the Multifibre Arrangement in 2005.

Table 6.7: Nominal Tariff in India and Some Asian Countries

Country	*Year*	*Simple average applied tariff (%)*	*Import-weighted average applied tariff (%)*
India	1990	79.0	61.9
	2000	32.7	32.2
	2004	28.3	25.4
Bangladesh	1989	106.6	88.4
	2000	21.3	19.1
	2004	11.7	9.0
China	1992	41.0	34.3
	2000	16.2	13.0
	2004	9.6	5.7
Indonesia	1990	21.9	14.8
	2000	8.4	5.9
	2004	8.2	6.5
Korea	1991	19.5	16.5
	2000	9.4	6.0
	2004	8.6	4.1
Malaysia	1990	16.9	10.1
	2000	8.0	4.9
	2003	7.4	4.9
Pakistan	1991	66.0	
	2000	23.6	43.5
	2004	16.2	15.5
Philippines	1991	26.0	15.5
	2000	7.1	3.4
	2004	5.5	2.0
Sri Lanka	1990	28.3	24.6
	2000	9.3	21.0
	2004	9.9	6.4
Taiwan	1990	16.5	10.1
	2000	7.3	2.9
	2003	6.2	2.8
Thailand	1991	37.8	33.9
	2000	16.4	9.7
	2003	13.5	10.6
Vietnam	1992	11.0	15.8
	2000	15.1	13.0
	2004	13.6	12.7

Source: Compiled from Nicita and Olarreaga (2006)

Table 6.8: Effective Rate of Protection (ERP) in Manufacturing in India and Some Asian Countries

	Coverage	Year	ERP	Source
India	Total manufacturing	1986–90	107	Sen (2008)
	Consumer goods		104	
	Intermediate goods		146	
	Capital goods		66	
	Total manufacturing	1996–00	42	
	Consumer goods		48	
	Intermediate goods		40	
	Capital goods		33	
Indonesia	Total manufacturing	1995	25	Fane and Condon (1996)
Malaysia	Total manufacturing	2003	16	Athukorala (2005)
Philippines	Total manufacturing	1999	10	WTO (1999)
Thailand	Total manufacturing	2004	23	Kohpaiboon and Jongwanich (2007)
Vietnam	Total manufacturing	2003	44	Athukorala (2006a)

Table 6.9: Indicators of Ease of Trading Across Border: India in the Regional Context, 2008

	Documents for export (number)	Time for export (days)	Cost to export (US$ per container)	Documents for import (number)	Time for import (days)	Cost to import (US$ per container)	Overall rank[1]
India	8	18	820	9	21	910	120
Bangladesh	7	28	844	9	32	1148	112
China	7	21	390	6	24	430	42
Hong Kong, China	4	6	525	4	5	525	3
Indonesia	5	21	667	6	27	623	41
Korea	4	11	1745	6	10	745	13
Malaysia	7	18	432	7	14	385	21
Pakistan	9	24	515	8	19	1336	94
Philippines	8	17	800	8	18	800	57
Singapore	4	5	416	4	3	367	1
Taiwan, China	7	13	747	7	12	747	29
Thailand	7	17	615	9	14	786	50
Vietnam	6	24	669	8	23	887	63

Notes: [1] The dataset covers 178 countries. This item is further disarregated in Table 6.10.

Table 6.10: Ease of Doing Business Ranking of Sleeted Asian Countries, 2008

	India	*Bangla-desh*	*China*	*Hong Kong*	*Indo-nesia*	*Korea*	*Malaysia*	*Pakistan*	*Philip-pines*	*Singa-pore*	*Sri Lanka*	*Taiwan*	*Thailand*	*Vietnam*
Ease of doing business	120	107	83	4	123	30	24	76	133	1	101	50	15	91
Starting a business	111	92	135	13	168	110	74	59	144	9	29	103	36	97
Dealingwith licenses	134	116	175	60	99	22	105	93	77	5	160	128	12	63
Employing workers	85	129	86	23	153	131	43	132	122	1	111	148	49	84
Registering property	112	171	29	58	121	68	67	88	86	13	134	24	20	38
Getting credit	36	48	84	2	68	36	3	68	97	7	97	48	36	48
Protecting investors	33	15	83	3	51	64	4	19	141	2	64	64	33	165
Paying taxes	165	81	168	3	110	106	56	146	126	2	158	91	89	128
Trading across borders	79	112	42	3	41	13	21	94	57	4	60	29	50	63
Enforcing contracts	177	175	20	1	141	10	63	154	113	4	133	92	26	40
Closing business	137	102	57	15	136	11	54	51	147	2	39	13	44	121

Note: * The dataset covers 178 countries. Countries are ranked in ascending order (Best practicing country = 1). Data are current as of June 1, 2007.

Source: World Bank, Doing Business 2008 (http://www.doingbusiness.org/documents/FullReport/2008/DB08_Full_Report.pdf)

Despite recent reforms, India's foreign investment regime still reflects the tension between the traditional aversion to foreign investment and the current recognition of its importance to economic development. In clothing and other light consumer-good producing industries, which are important in export expansion and job creation at the current stage of economic development of the country, FDI is limited to 24 per cent of total equity. Restrictions on foreign ownership of land limit the entry of foreign builders and developers in to the construction sector. Projects with 51 per cent or more foreign ownership still require a long procedure of government approval (Athukorala, 2007: Chapter 2).

Given these remaining restrictive elements in the investment regime and the relatively poor overall business climate in the countries India has continued to remain under performers in attracting FDI. Much of FDI in the country (other than that in the software and IT sectors) has been in domestic-market oriented (tariff-jumping) production. Failure to attract MNEs engaged in international production networks has been a key factor behind India's inability to benefit from the thriving production-fragmentation related international specialization in high-tech industries.

The remarkable success in the global software and information technology industries highlights India's potential to grow through export-oriented FDI under more liberal trade and investment regimes. The software industry is unique in India in that the restrictions on MNE entry have been virtually abolished. This was also accompanied by the removal of quantitative restrictions on imports of computers and peripherals, and drastic cuts in import tariffs on these products. This combination of FDI and trade liberalization laid the foundations that made the domestic software industry internationally competitive. Now virtually every major global company in the software industry has a base in India and the entry of MNEs has opened up opportunities for Indian companies to thrive through functional specialization, and to develop niche products and services for large clients abroad. As one commentator puts it, 'the success of foreign investment in the software industry is a measure of the failure of India's restrictions on foreign investment elsewhere' (Desai, 2002: 205).

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7 Manufacturing Protection in India Since Independence*

Garry Pursell, Nalin Kishor and Kanupriya Gupta

7.1 Introduction and Outline

Soon after independence, India adopted trade policies which made its manufacturing economy one of the most protected in the world. Now, at or near the end of a long series of extremely cautious liberalising reforms over many years, with frequent backtracking episodes, exceptions and false starts, India has emerged as one of the world's low protection and open industrial economies. Only very few quantitative restrictions (QRs) on manufactured goods remain, export policies for manufactured goods have been streamlined and simplified, and following new reductions introduced in the March 2007 budget, average manufacturing tariffs are now just slightly above China's and Korea's and at about the same level as Sri Lanka's, which has traditionally been considered the sole low protection industrial economy in South Asia. Reflecting this new openness of the manufacturing sector, in 2006 manufactured exports and imports were respectively about 62 per cent and 58 per cent of manufacturing GDP, whereas in the mid-1980s they were only about 16 per cent and 30 per cent. During the 'License Raj' years India consistently ran substantial deficits on manufactured goods account, but now manufactured exports consistently exceed manufactured imports and have become an important driver of industrial and general economic growth, increasing at between 20–25 per cent annually since 2002 and probably accounting for about a quarter of manufacturing GDP, compared with only 6 per cent or so during the pre-liberalisation years.[1] Despite continuing domestic policy constraints and infrastructure bottlenecks, after many years of disappointingly low growth, since about 2004[2] the manufacturing sector appears to have moved to a higher growth trajectory of about 9 per cent to 10 per cent annually.

What were the main steps in this long, gradual trade liberalisation story? This chapter traces the principal developments with the aid of some key quantitative indicators. The indicators are introduced and described in section 2. Section 3 follows with an interpretative history of India's manufacturing protection policies since independence, organising the story into five periods. During the first three periods — from 1947 to 1966, from 1966 to 1979, and 1979 to 1986 — the 'license Raj' in trade policies was first

* We are grateful to T.N. Srinivasan and Jatinder Bedi for comments on an earlier version

1 Rough estimates only. Value added in manufactured exports guessed to be 40 per cent.

2 Unless Indian fiscal years are specifically indicated (for example 2003/04) here and throughout this paper the years given refer to the year in which the Indian fiscal year ends. For example, 2004 means the Indian fiscal year 2003/04 which started on April 1 2003 and ended 31 March 2004.

established and thereafter dominated policy and practice, despite a number of liberalising episodes and forces. During the fourth period, from 1986 to 1993, the environment for Indian industry was transformed by the sustained Rupee devaluation which got under way during 1986 and continued until 1993, and then by the dramatic trade policy reforms of 1991 and 1992, which removed large parts of the QR system, simplified the tariff regime and export policies, and pre-announced a program of tariff reductions. During the fifth period, from 1993 to the present, this liberalisation process was consolidated, but cautiously and slowly, with backtracking episodes along the way. It can be divided into three sub-periods: from 1993 to 2001, when the prohibitive 'License Raj' tariffs were cut and the still substantial remainder of the import licensing system was finally removed, but when anti-dumping, 'indigenisation' (local content) plans, and the use of para-tariffs also flourished; from 2001 to 2004 when further liberalisation remained on hold while the effects of the now (almost) QR-free regime were carefully monitored; and from 2003/04 to the present when a pre-announced program of cuts in industrial tariffs was implemented in five successive budgets, bringing them down to levels (below 10 per cent on average) which very few of those who participated in the earlier policy debates would have imagined to ever be politically or economically feasible in India. Finally, section 4 concludes with a brief summary of the principal trade barriers which remain in the manufacturing sector, and comments on the contrast between the openness of manufacturing trade policies and India's highly restrictive trade policies in agriculture.

7.2 Manufacturing Trade Policies: Some quantitative indicators

Overview

Figure 7.1 shows the approximate shares of tradeable manufacturing GDP protected by import QRs estimated in four soundings: at the end of 1990, just before the 1991/92 reforms; in May 1992, just after the 1991/92 reforms had been implemented; in May 1995, following some further liberalisation during the previous three years; and finally in April 2007, six years after the final demise of the formal import licensing system in April 2001.[3] In the May 1990 sounding, it was estimated that products accounting for approximately 90 per cent of Indian manufacturing GDP were subject to the import licensing system and/or to other non-tariff import barriers. This followed the gradual case-by-case removal of import licensing from selected intermediates and machines during the 1980s, so the coverage of the system as measured by domestic production protected was higher than this during the 1980s, and probably even higher still during the 1970s and 1960s. According to the May 1992 sounding, the 1991/92 reforms cut the share of QR-protected manufacturing production in half, from 90 per cent to about 46 per cent. The focus of the reforms was entirely on machinery and equipment and intermediate materials and components. There are no pre-reform statistics, but after the reforms the share of QR-protected machinery and equipment in total machinery and equipment production was just 12 per cent, and the share of QR-protected manufactured intermediates in total intermediate production was 19 per cent. Consumer goods — including manufactured consumer goods defined to include textiles-were left out of the reforms and in May 1992 only about 1 per cent of the domestic production of manufactured consumer goods was subject to QR-free import competition. In continuation of past policies, except for a few consumer products which could be

[3] These are approximations by Garry Pursell who matched import licensing and other NTB lists with disaggregated value added estimates from ASI and NAS statistics.

imported at the discretion of parastatal import monopolies — for example edible oils — the import of all consumer goods was still effectively banned. But there was some slow further liberalisation during the three following years, and this included the cautious removal of some consumer products from import licensing (restricted) lists, and indirect measures which freed imports of others. In the May 1995 sounding, the total QR coverage was estimated to have dropped from 46 per cent to 36 per cent, and the coverage of consumer goods from 99 per cent to 79 per cent. After 1995 and the completion of the Uruguay Round, India's remaining industrial QRs were contested at the WTO by other WTO members (including the US and the EU). After a prolonged rearguard action India was finally obliged to phase out the remaining QRs which were not compatible with WTO rules: this process started in 1998 and finished in April 2001. Since then, as indicated by the April 2007 sounding, the conventional QR coverage of manufacturing — although protecting two large industries[4] — in the aggregate has declined to only about half of one per cent of manufacturing GDP.

Figure 7.1: Shares of Tradable Manufacturing Value Added Subject to Import QRs

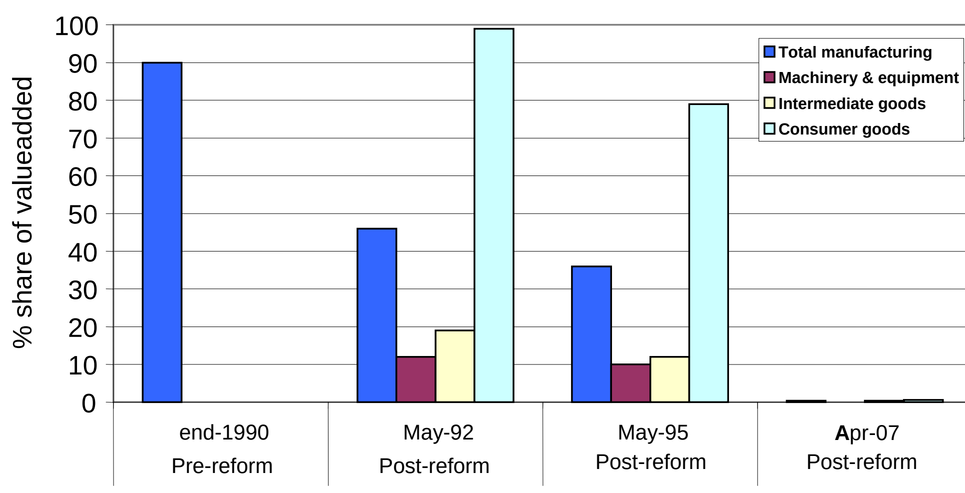


Figure 7.2 illustrates time series of three quantitative indicators of manufacturing protection which between them span the 43 years from 1965 to 2007. They are (a) import duty collection rates for manufactured goods from 1965 to 2000; (c) an incomplete series with some gaps of unweighted average industrial protective tariffs from 1986 to 2007 (c) low and high estimates of implicit protection from 1971 to 2006. For comparability the series are all shown as coefficients. For example, in 1986 the average industrial tariff coefficient (2.22) means that the unweighted average industrial tariff was 122 per cent, the import duty collection coefficient (1.71) means that Customs duties and other protective import taxes collected from imports of manufactured goods were 71 per cent of the cif value of manufactured imports, and the high (1.63) and low (1.48) implicit NPCs (nominal protection coefficients) means that on average domestic prices of

[4] Sugar refining (protected by making sugar importers subject to the Essential Commodities Act) and urea (protected by STE import monopolies).

manufactured goods are estimated to have exceeded border prices (adjusted for port and other domestic and handling costs) by about 63 per cent (high estimate) and 48 per cent (low estimate). The heavy line at a protection coefficient of 1.00 indicates zero protection. After 1992 in a number of years both the low and the high implicit protection series go below this level, indicating that average domestic prices are estimated to have been lower than the average border reference prices of a similar bundle of manufactured products.[5]

Figure 7.2: Indicators of Manufacturing Protection 1965–2007

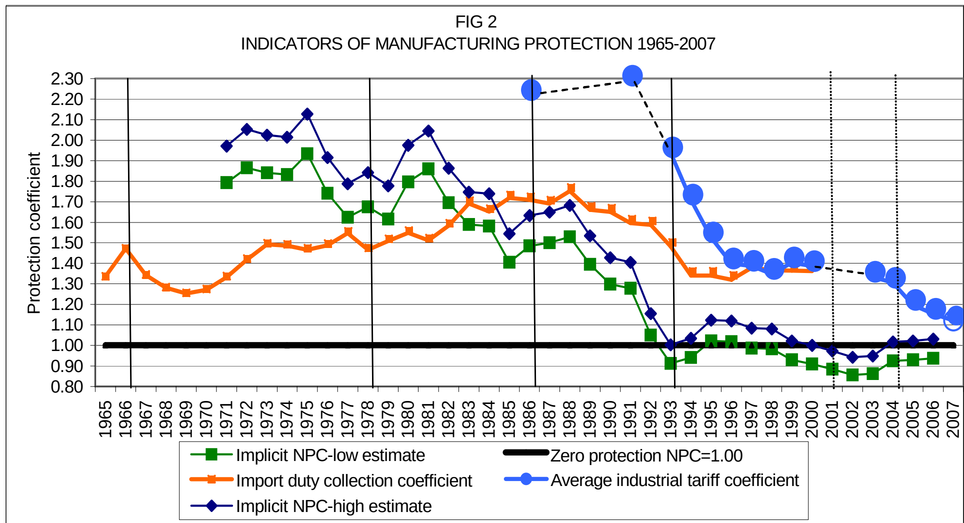
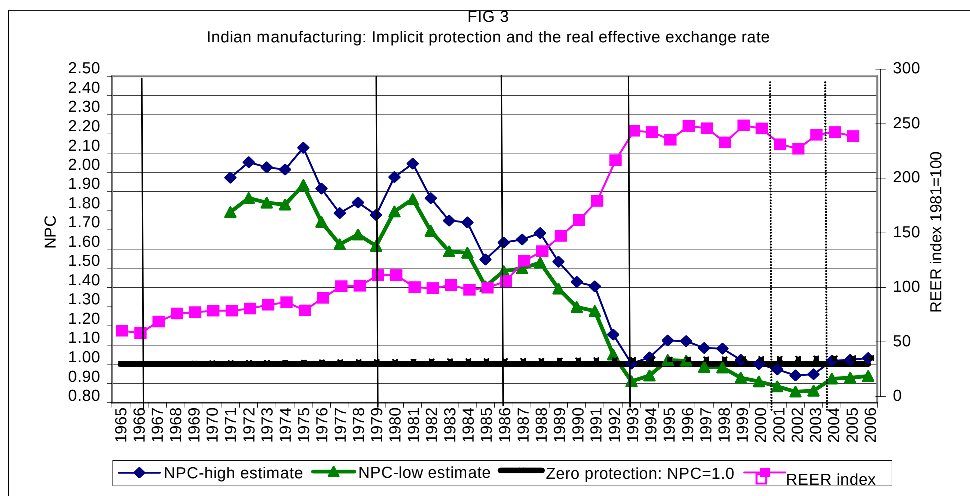


Figure 7.3 shows how the implicit protection series has moved over time alongside an index of India's real effective exchange rate (REER). The REER index is a monthly index[6] using total trade weights (India's exports plus imports) with 25 countries, averaged to Indian fiscal years, rebased with Indian fiscal 1980/81=100, and inverted from the usual display so that increases in the index represent real devaluation and decreases represent real appreciation. The REER index clearly illustrates a number of key events and trends in India's economic history since the mid-1960s, in particular: (a) the 1966 nominal Rupee devaluation, the overall impact of which was however partly offset by an acceleration of domestic inflation; (b) the slow, steady Rupee devaluation after 1966 up to 1979; (c) real appreciation in 1980 and 1981 which was maintained until about 1985/86; (d) the steady and eventually very large Rupee devaluation between 1986 and 2003; and (e) approximate exchange rate stability from 1993 to the present, during which nominal devaluation has been managed by the RBI so as to approximately offset the excess of domestic Indian inflation over average inflation in India's principal trading partners.

5 Average tariffs and tariff collection rates will not go below zero unless there are import subsidies.

6 Compiled by the IMF The index is only available back to 1980: before that REER estimates in early World Bank reports on India have been used and linked to the IMF series.

Figure 7.3: Indian Manufacturing: Implicit Protection and the Real Effective Exchange Rate



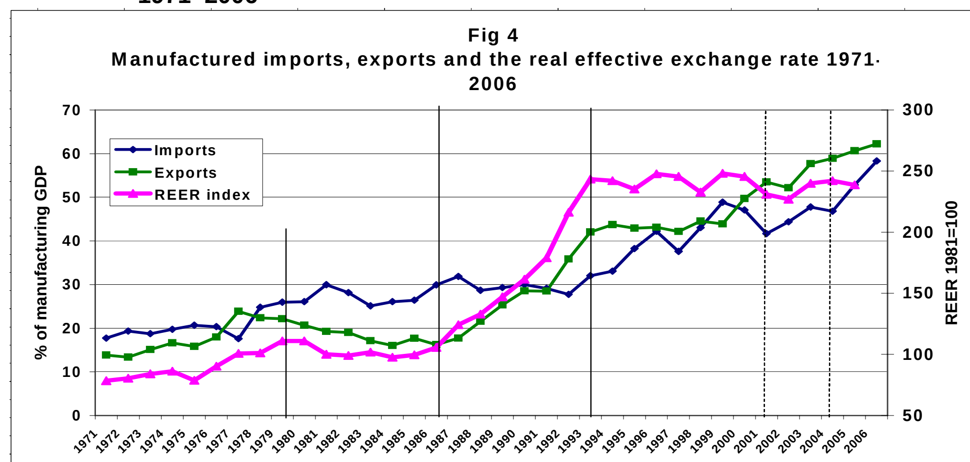
The Rupee devaluations between 1986 and 1993 were an essential precondition for the trade liberalising reforms introduced during 1991 and 1992. The devaluations started in a low key way during 1985/86 and then continued without a break for almost five years, before they accelerated with the sharp, large devaluations introduced to help manage the 1991/92 balance of payments crisis. Before the crisis, the exchange rate had already been devalued in real terms by about 70 per cent. Adding the crisis devaluations, the REER index increased by another 36 per cent.[7] At the end of the seven year process, in 1992/93 the nominal exchange rate with the US dollar had come down by about 150 per cent, and the total inflation adjusted multi-currency devaluation as measured by the REER index was also massive — about 130 per cent. This completely changed the environment for India’s tradeable sectors, including agriculture and manufacturing. The direct impact on manufacturing is apparent in Figure 7.2 from the steep decline in the implicit nominal protection estimates between 1988 and 1993.

Figure 7.4 shows the shares of manufactured imports and exports in manufacturing GDP since 1971, once again alongside the REER index. During the ‘License Raj’ period, despite the import substitution emphasis of both domestic and import policies, and the elaborate export facilitation and promotion policies that were followed, manufactured imports consistently exceeded manufactured exports by large margins, even though both were very low in relation to manufacturing GDP. This scenario changed dramatically when the Rupee devaluations started during 1985/86. Between then and 1993 when the period of rapid real Rupee devaluation ended, the nominal US dollar value of manufactured exports expanded at an annual average rate of 16 per cent, while manufactured imports barely changed, reflecting both the increasing prices of imports resulting from the devaluing Rupee, and towards the end of the period the contractionary fiscal and monetary policies employed to handle the 1991/92 balance of payments crisis. In 1992, for the first time since 1977, manufactured exports exceeded manufactured

[7] Note that in Figures 7.3 and 7.4, an increase in the REER index represents real devaluation. That is, if the trade weighted bundle of foreign currencies buys more Rupees the index goes up, and it goes down if Rupees become more valuable relative to foreign currencies.

imports, and since then there has been a trade surplus on manufactured goods account in all except one of the 15 years up to 2006. As noted above and discussed later, these were years of real exchange rate stability and slow but in the end quite drastic liberalisation of India's manufacturing trade policies. During the period, in nominal dollars up to 2006, both manufactured exports and imports expanded at an annual average rate of about 11 per cent, faster than the growth of manufacturing GDP. Consequently (Figure 7.4) the shares of both exports and imports in manufacturing GDP steadily increased, respectively to about 63 per cent and 58 per cent in 2006. These and other links between the exchange rate, trade policies and some aspects of the performance of manufacturing are discussed later in this paper. Before doing so the next section describes how the implicit protection series has been constructed and assesses its usefulness as an indicator of important developments affecting the sector.

Figure 7.4: Manufactured Imports, Exports and the Real Effective Exchange Rate 1971–2006



Implicit Nominal Protection, 1971–2006

Estimates of implicit NPCs for the manufacturing sector for some representative years during the period 1971 to 2006 are shown in Table 7.1.[8] These estimates are for each of 18 tradeable manufacturing subsectors distinguished in the national accounts statistics (NAS). The estimates have been made separately for the NAS segment of larger scale 'registered' manufacturing firms, the NAS segment of smaller scale 'unregistered' producers, and weighted average NPCs have been calculated for total manufacturing including both the registered and unregistered segments.[9] The estimates in Table 7.1 are the basic 'low' projections graphed in Figures 7.1 and 7.2. The alternative 'high' projecttions have been done for the aggregates only, not for the subsectors. A detailed description of the methodology is given in a related paper (Pursell, Kishor and Gupta, 2007).

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[8] Researchers who would like a copy of the complete time series for all years please contact Garry Pursell at <ggp28435@aol.com>

[9] The reliability of some aspects of the NAS manufacturing data base is discussed in Bedi and Banerjee (2007). They argue that the NAS value added estimates for the non-registered manufacturing sectors are too high. As discussed in a related paper to this one (Pursell, Kishor and Gupta, 2007), if this is correct it would only have a minor effect on the aggregate NPC estimates given in this paper. However, it could affect some of the weighted average (registered plus non-registered) sectoral averages.

Table 7.1: Nominal Protection Indicators for Selected Years, 1971–2006, Aggregates and by National Accounts Manufacturing Subsectors									
	1971	**1979**	**1987**	**1990**	**1993**	**1995**	**2001**	**2004**	**2006**
REGISTERED MANUFACTURING									
20-21 food products	1.33	1.14	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 beverages,tobacco,etc	2.25	2.06	1.29	0.96	0.57	0.80	0.50	0.54	0.60
23 cotton textiles	2.15	1.55	1.15	1.06	0.75	0.95	0.88	0.95	1.08
24 wool,silk,etc	2.23	2.00	1.79	1.98	1.25	1.46	0.86	1.00	0.98
25 jute textiles	1.24	1.70	1.15	1.69	0.91	1.14	1.13	1.12	1.27
26 textile products	0.69	1.07	1.20	0.89	0.55	0.67	0.57	0.73	0.83
27 wood,furniture,etc	1.47	1.19	1.30	1.02	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc	2.63	2.53	1.94	1.60	1.24	1.25	1.15	1.15	1.28
29 leather & fur products	1.01	1.30	1.15	0.96	0.63	0.68	0.63	0.57	0.63
30 rubber, petroleum,etc	1.56	1.48	1.63	1.19	0.88	0.97	0.88	0.94	0.80
31 chemicals,etc	3.00	2.44	1.96	1.49	1.08	1.25	1.07	1.06	1.04
32 non-metallic products	1.41	1.38	1.21	1.05	0.76	0.85	0.62	0.65	0.66
33 basic metal industries	1.64	1.47	1.61	1.54	1.10	1.14	1.09	1.15	0.98
34 metal products	1.98	1.88	1.60	1.76	1.20	1.31	0.99	0.96	0.94
35 non-electric machinery	2.03	1.86	1.60	1.42	1.07	1.03	0.84	0.93	0.99
36 electric machinery	2.61	2.62	1.83	1.66	1.13	1.26	0.96	1.01	1.10
37 transport equipment	1.94	1.99	1.70	1.63	1.06	1.09	0.95	0.96	1.05
38 other manufacturing	2.17	2.53	1.80	1.46	0.98	1.02	0.92	1.04	1.15
WTD AVERAGE REG MANUF	**1.83**	**1.68**	**1.58**	**1.36**	**0.96**	**1.06**	**0.91**	**0.96**	**0.95**
UNREGISTERED MANUFACTURING									
20-21 food products	1.82	1.56	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 beverages,tobacco,etc	3.12	2.85	1.29	0.96	0.57	0.80	0.50	0.54	0.61
23 cotton textiles	2.33	1.13	1.15	1.09	0.76	0.95	0.88	0.96	1.08
24 wool,silk,etc	2.77	1.74	1.79	1.67	1.15	1.34	0.79	0.92	0.91
25 jute textiles	1.23	1.28	1.15	1.32	0.86	0.97	0.96	0.95	1.08
26 textile products	1.57	1.27	1.20	1.16	0.79	0.88	0.75	0.96	1.10
27 wood,furniture,etc	1.47	1.20	1.30	1.03	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc	2.96	2.88	1.70	1.40	1.09	1.10	1.01	1.01	1.11
29 leather & fur products	1.42	1.81	1.15	0.99	0.63	0.68	0.63	0.57	0.63
30 rubber, petroleum,etc	2.28	1.71	1.59	1.26	0.93	1.15	0.91	0.89	0.75
31 chemicals,etc	1.69	1.76	1.96	1.36	0.97	1.00	1.00	1.06	1.06
32 non-metallic products	1.42	1.38	1.21	1.04	0.76	0.85	0.62	0.65	0.65
33 basic metal industries	1.26	1.28	1.30	1.18	0.84	0.87	0.83	0.88	0.75
34 metal products	1.79	1.54	1.60	1.75	1.20	1.33	0.99	0.96	0.94
35 non-electric machinery	2.01	1.96	1.60	1.42	1.00	1.03	0.84	0.93	1.00
36 electric machinery	2.32	2.19	1.83	1.66	1.20	1.26	0.96	1.00	1.10
37 transport equipment	1.95	2.21	1.70	1.63	1.06	1.09	0.95	0.96	1.05
38 other manufacturing	1.69	1.98	1.21	0.92	0.61	0.71	0.62	0.70	0.78
WTD AVERAGE UNREG MANUF	**1.75**	**1.55**	**1.37**	**1.19**	**0.83**	**0.95**	**0.83**	**0.86**	**0.90**
TOTAL MANUFACTURING									
20-21 food products	1.58	1.34	1.45	1.20	0.87	0.95	1.03	1.11	1.25
22 beverages,tobacco,etc	2.79	2.58	1.29	0.96	0.57	0.80	0.50	0.54	0.60
23 cotton textiles	2.20	1.39	1.15	1.07	0.76	0.95	0.88	0.95	1.08
24 wool,silk,etc	2.35	1.93	1.79	1.92	1.23	1.44	0.84	0.98	0.97
25 jute textiles	1.24	1.65	1.15	1.62	0.90	1.09	1.08	1.06	1.20
26 textile products	1.45	1.23	1.20	1.04	0.67	0.74	0.63	0.82	0.93
27 wood,furniture,etc	1.47	1.20	1.30	1.03	0.97	1.10	1.21	1.16	1.39
28 paper&printing,etc	2.71	2.64	1.85	1.54	1.18	1.20	1.08	1.08	1.19
29 leather & fur products	1.32	1.70	1.15	0.98	0.63	0.68	0.63	0.57	0.63
30 rubber, petroleum,etc	1.67	1.54	1.62	1.21	0.88	0.99	0.89	0.93	0.79
31 chemicals,etc	2.68	2.30	1.96	1.47	1.06	1.21	1.06	1.06	1.05
32 non-metallic products	1.42	1.38	1.21	1.05	0.76	0.85	0.62	0.65	0.66
33 basic metal industries	1.58	1.45	1.55	1.49	1.07	1.10	1.05	1.10	0.94
34 metal products	1.86	1.65	1.60	1.75	1.20	1.32	0.99	0.96	0.94
35 non-electric machinery	2.02	1.88	1.60	1.42	1.05	1.03	0.84	0.93	0.99
36 electric machinery	2.56	2.56	1.83	1.66	1.15	1.26	0.96	1.01	1.10
37 transport equipment	1.94	2.02	1.70	1.63	1.06	1.09	0.95	0.96	1.05
38 other manufacturing	1.88	2.11	1.40	1.04	0.71	0.81	0.74	0.83	0.93
WTD AVERAGE TOTAL MANUF	**1.79**	**1.62**	**1.50**	**1.30**	**0.91**	**1.02**	**0.88**	**0.92**	**0.94**
HIGH NPC ESTIMATES									
REGISTERED MANUF	**2.01**	**1.84**	**1.74**	**1.49**	**1.05**	**1.16**	**1.00**	**1.05**	**1.05**
UNREGISTERED MANUF	**1.93**	**1.70**	**1.51**	1.31	0.92	1.05	0.91	0.94	0.99
TOTAL MANUFACTURING	1.97	1.78	1.65	1.43	1.00	1.12	0.97	1.02	1.03
OUTPUT SHARES									
REGISTERED MANUF	0.52	0.53	0.60	0.64	0.63	0.66	0.66	0.67	0.68
UNREGISTERED MANUF	0.48	0.47	0.40	0.36	0.37	0.34	0.34	0.33	0.32

The time series projections are from a study undertaken at the World Bank's New Delhi office which estimated nominal and effective protection of manufacturing in 1986 and 1987.[10] Prior to the 1991/92 trade policy reforms, about 90 per cent of Indian manufacturing was protected against import competition by discretionary import licensing or some other non-tariff import barrier, such as canalisation.[11] For all practical purposes, there was a complete ban on imports of consumer goods. In addition, tariffs were prohibitively high, on average over 100 per cent when weighted by domestic production. Practically all manufactured imports were intermediate and capital goods. Generally speaking, imports of these were only allowed if they could not be supplied by Indian manufacturers, or if they were materials or components required by exporters. In these cases, the normal tariffs were reduced by partial exemptions in the case of materials supplied to firms producing for the domestic market, and duty free (under special import licenses for exporters or as a result of duty drawbacks) when they were to be used in production for export. Local producers of certain types of machinery and equipment were about the only Indian industries facing some QR-free import competition over tariffs.

In this environment, the level of tariffs — either official tariffs or tariffs actually levied after deducting exemptions — had practically no relation to the *de facto* level of manufacturing protection, defined as the extent to which domestic firms set their prices above the prices of the same or similar goods in world trade. In some cases, domestic prices exceeded world prices by more than tariffs, but more often there was considerable tariff redundancy, in the sense that actual differences between domestic and world prices were much less than tariffs. For example, in 1987 the import tariff on cotton yarn was 140 per cent, but domestic cotton yarn prices were estimated to only slightly exceed the world prices of similar yarns.

For these reasons, because of the overwhelming role of non-tariff protection, in the 1986–1987 World Bank study the NPCs of a representative sample of domestically manufactured goods were estimated by directly comparing ex-factory domestic prices with reference prices. Most reference prices were derived from world prices plus the estimated freight and insurance required to bring the products to Indian ports, plus adjustments for port and handling charges in India. Data on actual cif import prices was used in the relatively few cases where competing imports were actually occurring, and fob export prices were used in the case of a few export-oriented sectors (for example, some textiles and garments). Because transport costs are generally a much smaller proportion of the world prices of manufactured goods than of primary commodities, whether import or export prices are used would only affect the aggregate estimates for manufacturing to a very minor extent, and certainly much less than other sources of estimation error.

The product level protection estimates were then aggregated into NPC estimates for each of the 18 manufacturing subsectors producing tradeable products distinguished in the national accounts.[12] This aggregation included nominal protection estimates for products produced by small scale non-registered enterprises as well as the production of registered large and medium scale manufacturing firms. The NPC estimates for these subsectors were then projected backwards and forwards by using the implicit subsectoral GDP deflators to project domestic prices, and deflators constructed from the detailed US producer price index to represent trends in the world prices of the products included in

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[10] Some of the results of this study are published in World Bank (1989), Chapter 4 and the Supplementary Tables to Chapter 4 (pp 311–22). This report also provides a detailed description and analysis of India's 'License Raj' trade regime as it was in the mid 1980s.

[11] A statutory import or export monopoly, usually a public sector firm.

[12] Two manufacturing sectors supplying repair services were excluded.

each of the 18 Indian subsectors. The weighted average NPC of manufacturing as a whole was then derived from the subsectoral NPCs using output in reference prices as weights.

The 1987 study gave the following low and high estimates for the weighted average implicit nominal protection of manufacturing.[13]

	Registered	Unregistered	Total
Low	1.58	1.37	1.50
High	1.74	1.51	1.65

A few comments on these base estimates are in order. Firstly, the price comparisons had to contend with many standard difficulties of this kind of research, especially the problem of finding and estimating the border prices of internationally comparable products, since Indian policies in general prevented imports, and the problem of allowing for differences in quality and specifications. Aggregation to the entire manufacturing sector from a relatively small sample of price comparisons also involved some plausible but arbitrary assumptions. The fairly large gap between high and low estimates reflects the incompleteness and considerable uncertainty of the original price comparison exercise.

Secondly, weighted average nominal protection of unregistered small scale manufacturing was much below the nominal protection of registered (medium and large scale) manufacturing.[14] This difference principally reflects the much greater weight in the small scale sector of highly competitive, labour intensive industries (for example, power loom textile production, garments, light engineering and so on) with below-average nominal protection. By contrast, the higher weighted average nominal protection of registered manufacturing reflects the high costs and prices (relative to world prices) in 1987 of many import substitution capital intensive industries producing basic industrial materials: for example petrochemicals, synthetic fibres and yarns, fertilisers, inorganic chemicals, steel, non-ferrous metals and so on.

Thirdly, the high prices of industrial materials predominantly produced in the large scale sector fed through to and pushed up the costs and selling prices of medium and small scale firms in competitive industries, resulting in moderate to high nominal protection in many of these sectors as well.

Fourthly, most of the comparisons which were made between domestic and estimated international prices, were from data supplied by relatively large firms, on ex-factory prices excluding excise taxes. These price comparisons were then used to infer the nominal protection of small scale firms producing the same or similar products. However, small scale firms were largely exempt from excise taxes, in addition to which the quality of their products in many industries was probably inferior. To take account of these two considerations, in a few cases rough upward adjustments were made to the NPC estimates for the unregistered sectors, but overall the probability is that the nominal protection of this sector is somewhat underestimated for these reasons.

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[13] These estimates are higher than the estimated average NPC for total manufacturing of 1.42 reported in a previous study using the same basic survey data (Pursell & Gulati (1995). The estimates were adjusted upwards in the light of new information on some key industries and the implausibility of substantial negative protection in some sectors when the original estimates were projected forwards to the 1990s.

[14] Registered factories under the Factories Act of 1948 were all those employing 10 or more workers and using electric power, and those not using power but employing 20 or more workers.

Finally, in 1987 manufactured exports accounted for a very low share (about 6 per cent) of total manufacturing production, and were concentrated in only a few industries, notably garments, cut diamonds, cotton textiles and shoes. Except for cut diamonds, which are practically entirely exported, the share of exports in the production of these exporting industries was also very low relative to total domestic sales, and to a large extent the exporting segments were specialised and seemed to have limited connection or impact on competition and price levels in the domestic market. Consequently it was not legitimate during this period to assume that competition in exporting industries would tend to equalise profits and therefore incentives for exporting and domestic supply, and then to infer protection levels in the domestic market from the more easily estimated protection levels of exports.[15]

In addition to the inherent uncertainty of the original base period study, the method used to project the 1987 NPC estimates forwards and backwards has its own problems, and presumably becomes less reliable the further the projection is carried, in particular because of the changing product composition of each sector over time and the failure of the national accounts deflators to systematically incorporate new products. Some indication of the likely direction and magnitude of the estimation error became apparent when the base ('low') NPCs projected to the mid and late 1990s gave estimated NPCs for some sectors which were lower than those suggested by several partial price comparison surveys undertaken in those years.[16] The alternative 'high' estimate series starting at a weighted average NPC in 1987 of 1.65 for total manufacturing is an informed judgment on the likely upper bound of the series.

Even though, as this adjustment indicates, there are many problems in the construction of the implicit NPC series, it nevertheless seems to be the best available indicator of the level of and trends in the nominal protection of manufacturing over the long period which it covers. Certainly, because of the pervasive QRs until as late as April 2001, it is a better indicator than either tariff collection rates or average manufacturing tariffs. The relation between implicit protection and tariffs is discussed in the next section.

Implicit Protection and Tariffs

The *tariff collection series* (shown in Figure 7.2) is defined as total protective customs receipts (Customs duties including receipts from para-tariffs) from the import of manufactured goods in a given year, divided by total manufactured imports in that year.[17] It excludes Customs receipts from 'countervailing' (CVD) duties (also known as 'additional' duties) which are levied on top of customs tariffs at the same rate as excise taxes on domestic production of the same goods. A second series (not shown in Figure 7.2) includes the countervailing duties in total Customs receipts.

Before 1992, neither of these series has much relevance as an indicator of manufacturing nominal protection, since, as already noted, during this period the general

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[15] Even if this assumption were made, as a result of a direct export subsidy (Cash Compensatory Support or CCS) that was paid on most manufactured exports prior to 1992, and also various other export subsidies, the inferred nominal protection of domestic production would have been positive

[16] In particular a 1993/94 price comparison survey of firms producing consumer goods in the Delhi area. National Council of Applied Economic Research (1994).

[17] The series excludes imports of, and Customs revenue from, petroleum, oil and lubricants (POL), and gems and jewelry (mainly rough diamonds). It also excludes estimates of export related imports, that is, imports of inputs by exporters that are either duty free or subject to duty drawback. The detailed disaggregated Customs collections separating out collections on imports of manufactured goods from collections on imports of other products, used to be published in GOI's 'Explanatory Memorandum' to the annual budget papers. However this was no longer provided in the 2000/01 and subsequent budget documents.

operating principle of the import licensing system was to only allow imports when the products were not available from Indian producers.[18] Nevertheless, the series are of some interest because they provide an indication of the extent to which the cost to local manufacturers of imported non-competing intermediate material inputs and machinery was being pushed up by Customs duties. Until 1986 the series inclusive of countervailing duties is probably the best indicator of this cost-increasing effect. Until then excise duties on inputs could not be deducted from the excise duties payable on finished products. In 1986 a ‘Modified Value Added’ (MODVAT) scheme was introduced which allowed most excise duties (including countervailing duties) on inputs (but initially not on capital equipment) to be deducted from excise duty liabilities on finished products. Consequently, after 1986 the series which excludes the excise component from Customs receipts is a better indicator of the cost increasing impact on local firms.

It is apparent from this latter series (Figure 7.2) that the average customs duties on imported manufactured intermediate materials and equipment, increased steadily from about 1970 and reached very high levels of around 70 per cent in the mid-1980s. This reflected general increases during the period in Customs duties, and especially in ‘Auxiliary’ duties[19] charged on top of Customs duties, and is one among a number of explanations for the high production costs about which manufacturers complained at the time. However, they were generally able to offset, or more than offset, these high production costs by selling their finished products at high prices which were insulated from import competition by the import licensing system. Before the introduction of MODVAT in 1986, manufacturing costs would have been increased by even more than indicated by this series. For this reason the MODVAT reform was an important precursor to the 1991/92 trade liberalisation measures, since both the reduction in QR coverage and the tariff reductions were more readily accepted and managed by domestic firms once, under VAT principles, indirect taxes on their domestically purchased and imported inputs could be credited against their indirect tax liabilities on their sales. Following the sharp reductions in Customs tariffs which were initiated with the 1991/92 reforms, by the mid 1990s the average collection rate fell to much lower levels — around 35 per cent — or about half the levels that had prevailed during the late 1970s and the first half of the 1980s. However, these collection rates (Figure 7.2) were far above estimated implicit nominal protection, which had dropped to about zero after 1993.

Figure 7.2 also shows a series of *unweighted average tariffs* (exclusive of CVD and exemptions) applicable to manufactured goods as shown in the Customs Tariff Schedules. The two pre-reform observations (122 per cent in 1986 and 129 per cent in 1991) typify the situation in the middle to late 1980s. They reached these astronomical levels in a series of regular increases which commenced in the 1970s.[20] Starting with the reforms announced in 1992, however, average manufacturing tariffs declined dramatically to 40 per cent in 1996. They reached a low point of 35 per cent in 1998, but then they increased again to around 40 per cent or just below with new para-tariffs introduced in the following three budgets. After a pause, a new round of pre-announced tariff cuts started in 2004, which brought the average down to about 12 per cent in 2007. Further reductions were announced in the March 2007 budget which have probably cut

[18] Independently of this, collection rates are inherently misleading indicators of protection levels since imports are a decreasing function of tariff levels. If tariffs protecting a local industry are high enough there will be no imports and the protection to the industry will not be captured by the collection rate.
[19] Auxiliary duties were abolished by the 1991/92 reforms
[20] Mainly from successive increases in ‘Auxiliary’ duties.

average industrial tariffs to well below 10 per cent in fiscal 2007/08.[21] Both the early post-1992 and the more recent post-2004 rounds of tariff cuts were 'tops down', with the main emphasis on reductions in top rates. This drastically reduced the dispersion of tariffs and the potential for high effective protection resulting from tariff escalation. In January 2004 around 80per cent of industrial tariff lines were at a target maximum rate of 20 per cent,[22] and the reductions since then to a general maximum of 10 per cent will have further reduced tariff dispersion.

For the reasons already given, until the post 2004 period, there is no reason to think that import duty collection rates or average tariffs would have much connection to realised protection of the manufacturing sector. Consequently, despite its evident weaknesses, the implicit NPC series is a superior indicator of the level of, and trends in manufacturing nominal protection. More generally, as illustrated in Figure 7.2, in several ways it fits in a plausible way into the economic history of the period it covers. Firstly, the extremely high implicit nominal protection of between 80 and 100 per cent during the 1970s until the mid-1980s is consistent with what is known about the highly restrictive import licensing system of that period. Secondly, the steep decline in implicit nominal protection from around 50–60 per cent in 1986 to about zero in 1993 is consistent with the real Rupee devaluation of approximately 135 per cent during the same period. The devaluing Rupee during these years pushed up the border prices of imported manufactured goods expressed in Rupees, and these increases were far greater than the corresponding increases in the prices of domestically produced manufactured goods that went along with domestic inflation and other factors, including the increased cost in Rupees of imported intermediates and machinery. Consequently, as shown in the implicit nominal protection series, the average excess of the prices of domestically manufactured goods over the Rupee import prices of the same goods consistently declined, and by 1993 it seems to have disappeared altogether.

According to the implicit protection series, after it bottomed in 1993, implicit average nominal protection of the manufacturing sector as a whole increased to a maximum of around 10 per cent by 1995, but since then up to the latest estimate in 2006 in most years it was at or below zero. As is evident from Figure 7.2, this was well below the average manufacturing tariffs in those years and also below the average tariff collection rate. It was not until 2006 or 2007 that average tariffs came down to somewhere in the vicinity of estimated implicit protection, apparently eliminating most of the tariff redundancy that followed the 1986–93 Rupee devaluations.

The indicators illustrated in Figure 7.2 are averages, and it is possible that the protection of individual products or subsectors within manufacturing may have deviated from this pattern. In particular, after 1993, tariffs and tariff collection rates were *prima facie* a better indicator of the nominal protection of domestically produced intermediate goods and machinery, most of which were freed from import licensing during the 1991/92 reforms. But according to the disaggregated implicit protection series (Table 7.1) the changes in the implicit protection rates of the intermediate good subsectors (for example, chemicals, basic metal industries, metal products, non-electric machinery and so on) were not very different from aggregate manufacturing, indicating that there was also very considerable tariff redundancy in these subsectors until about 2006. This in turn suggests that most of the manufactured intermediates and machines that were being

[21] The averages referred to here are unweighted averages of all 'non-agricultural' tariff lines defined to include HS chapters 25–97. According to the 2007 WTO *Trade Policy Review* report on India (WTO, 2007) in 2006/07 the average using the WTO's definition of non-agricultural tariff lines was about 2 percentage points higher.

[22] World Bank (2004), Vol II p.41.

imported over tariffs during this period were not directly competing with domestic production. It is also in principle possible that protection rates of individual products still subject to the import licensing system could have been higher than the average implicit rate, including nearly all manufactured consumer goods until, the final phase-out of the system in April 2001. But again, even though this may have happened for some individual products, it was not sufficiently widespread to show up at the level of the predominantly consumer good subsectors for example, food products, beverages & tobacco, textile products, wood furniture and related products, leather and leather products, and fur products. As indicated in Table 7.1, in most years the estimated implicit average protection rates of these subsectors were below or in the region of zero for the entire 1993–2006 period.

7.3 Manufacturing Trade Policies Since Independence[23]

From Independence to the 1966 Devaluation

During the second half of the nineteenth century until about 1921 India's British rulers followed regional free trade policies with practically no restrictions or taxes on exports to or imports from Britain, its other colonies, and Commonwealth countries. These almost free trade policies began to change in about 1921 following the collapse of the post-World War I boom, and protective tariffs continued to be introduced during the 1920s and 1930s. Then in 1940, general controls were imposed on all imports and exports in order to deal with the scarcities of goods, shipping and foreign exchange and wartime priorities. The general rule was that imports would only be allowed if they were essential and could not be supplied by local industries.

After independence in August 1947, substantial foreign exchange balances built up during the second world war, followed by the 1949 pound sterling devaluation, initially provided some scope for relaxing the wartime import and other controls by expanding the scope of Open General License (OGL) lists (that is, lists of goods that could be imported without obtaining a license) and increasing tariffs in order to take some of the pressure off the import licensing system. However by 1956 inflation had begun to erode the effects of the devaluation, and this continued and accelerated during the next 10 years, in effect amounting to continuing and substantial real appreciation of the Rupee in relation to the then fixed rates with the pound and the US dollar. Consequently, the start of the Second Five Year Plan in 1956 coincided with a severe foreign exchange crisis, and the following period up to 1966 was characterised by comprehensive and tight administration of the import licensing system. These foreign trade policies were an extension of more general economic policies under which the 'commanding heights' of the industrial economy were dominated by state enterprises, and the private sector was subject to very extensive controls, which collectively came to be known as the 'License Raj'. In June 1966 the Rupee was devalued, and this was accompanied by a brief liberalisation episode discussed in the next section.

During this period nearly all imports were either subject to discretionary import licensing or were 'canalised' by monopoly government trading organisations, with some flexibility provided by changing OGL lists. The products on the OGL lists could only be

[23] The discussion in this section on policies before 1990 relies to a large extent on Pursell (1992). More information on the earlier years-especially the 1960s and 1970s can be found in references cited there, in particular in Bhagwati and Desai (1970), Bhagwati and Srinivasan (1975), Nayyar (1976), Panchamukhi (1979), Wolf (1982), and Joshi and Little (1994). There is comprehensive discussion of macroeconomic policies (including exchange rate management) during and since the 1991/92 economic reforms in Acharya (2006).

imported by 'actual users' and could not be resold: they were almost entirely raw materials, components or machines which were not domestically produced and required by domestic producers. In this system tariffs lost most of their relevance for regulating the quantity of imports and for protecting local industries: their principal function was to raise revenue and to transfer quota rents from or to the recipients of import licenses. After 1956 import licensing was regularly tightened in response to the steadily worsening foreign exchange situation, and tariffs were increased and reached very high levels by early 1966. As a result large and highly variable gaps opened up between the domestic and international prices of manufactured products. In order to offset the anti-export bias resulting from the increasingly overvalued exchange rate, subsidies — many of which were reported to be substantial — were provided to manufactured exports, principally by allowing exporters to import duty free otherwise restricted raw materials, components and machines that they could sell in the domestic market for premiums that reflected scarcity values. As a result of these subsidies and other export incentives for manufacturing, a fairly wide range of manufactured products began to be exported for the first time.[24] There are no comprehensive estimates of implicit manufacturing NPCs during the 1960s and before, but the relevant literature strongly suggests that average implicit protection was very high and increasing during the pre-devaluation period, and that it probably remained high after the devaluation. Certainly there was no drastic change in Indian policies or in world prices which would explain a sudden jump from lower levels to the estimate of between 79 per cent and 97 per cent for 1971, the first year of the implicit NPC series illustrated in Figure 7.2.

From the 1966 Devaluation to 1979

The nominal devaluation in June 1966 was 57.5 per cent in relation to the pound and the US dollar, but owing to high domestic inflation it has been estimated that it was about 30 per cent in real terms. In the following years inflation was gradually brought down to much lower levels, and between 1971 and 1979 the REER declined by another 42 per cent. In part this followed the decline of the British pound against other currencies until the Rupee–Sterling peg was removed in 1975, and in part it resulted from accelerated inflation in the rest of the world associated with the 1973 oil shock, from which India was largely insulated because of its highly restrictive trade policies and the resulting very minor role of trade in its economy.

The 1966 devaluation was accompanied by some relaxation of import licensing, tariff reductions and the abolition of some export subsidies and reductions in others. However, by 1968 tight import licensing had been reinstated under which the import of nearly all consumer goods (including textiles) was effectively banned and the only imports allowed were intermediate materials, components and capital equipment provided 'actual users' could demonstrate that they were 'essential' and not 'indigenously available'. As previously, tariffs — which remained about the same during the 1970s — were mostly used to transfer some of the import licensing rents to the government, and were irrelevant as protective instruments, except to the extent that they influenced the cost of imported intermediates and equipment that was not locally produced. Reflecting the irrelevance of tariffs, the Tariff Commission, which had been established in 1945, was abolished in

[24] There are no studies which have attempted to comprehensively quantify the effects of these policies on manufacturing incentives during these years, and doing so would be a major research task in view of the scattered and very incomplete data that is available before about 1965. The key missing bits of information are nominal protection estimates for manufacturing, which would require detailed comparisons of domestic and border prices of both tradable inputs and finished products.

1976. This remained the situation until the end of the 1970s, when a new phase of very slow partial liberalisation commenced.

The effects of these changes in the exchange rate and trade policies on estimated implicit protection in manufacturing can be seen in Figures 7.2 and 7.3. There are no estimates of average tariffs during this period, but the initial cuts following the devaluation which were soon reversed clearly show up in the dip and subsequent increase in the collection rate between 1966 and 1973. According to the NPC time series, implicit protection
was extremely high between 1971 and 1975, but then declined quite sharply to (still very high) levels of between 60–80 per cent in 1978 and 1979. This decline in the second half of the decade was associated with an acceleration after 1975 in the devaluation rate of the real effective exchange rate (Figure 7.3).

From 1979 to 1986

The Rupee devaluation of 1966 and the continuing depreciation that followed during the 1970s helped reduce the current account deficit and despite large increases in petroleum imports after 1973, fairly substantial foreign exchange reserves were built up. This improved current account situation led to a rapid expansion of imports, which with slowing export growth created large current account deficits in 1979 and 1980. A crisis was averted in 1980 and 1981 with the help of an IMF loan. The real value of the Rupee actually appreciated slightly in 1981 and held steady at the new level until 1986 (Figure 7.2). A process of slow, cautious liberalisation of non-tariff import controls which had started in 1977–78 continued during this period, except for a tightening episode in 1980–81. The principal way this was done was by expanding the number of non-competing machines and intermediate materials and components on OGL lists, and ‘decanalising’ other products that is, removing them from the lists of products which could only be imported by the various government owned or approved ‘canalising agencies’. There was also some liberalisation of domestic industrial controls, which had an indirect liberalising impact on import controls. The major thrust of these policy changes was to ease the supply situation of important non competitive inputs and to give manufacturing industries better and more flexible access to intermediate materials and capital equipment. The steep decline in implicit protection between 1981 and 1985 (Figure 7.2), from about 85–105 per cent to 40–55 per cent suggests that this strategy paid off to some extent, since the reduction in measured protection resulted from a combination of lower domestic prices[25] and higher international prices at a basically unchanged real exchange rate. However domestic industries continued to be insulated from direct import competition, both by the QR system and by prohibitively high tariffs. In fact, in order to collect import licensing rents that otherwise would have gone to import license holders, during this period the government steadily increased tariffs, as is apparent from the upward gradient of the import duty collection coefficient (Figure 7.2). In 1986 the unweighted average tariff on manufactured goods was estimated at 122 per cent, even after allowing for large numbers of special exemptions and partial exemptions that could be identified in the published tariff schedule.

[25] Between 1980 and 1985 the national accounts implicit deflator for manufacturing came down in real terms by approximately 8 per cent or 13 per cent, depending on whether the general inflation rate is represented by the overall national accounts deflator or the wholesale price index. The rest of the decline in estimated implicit nominal protection during these years is due to increases in the world prices of the products in India’s manufacturing production bundle expressed in real Rupees.

From 1986 to 1993

Starting in about April 1985, a new policy commenced under which the Rupee was steadily devalued in real terms. This continued without a break for the next six years, almost on a monthly basis, until there was a sharp crisis-induced devaluation in July 1991, followed by about another year of further depreciation until September 1992. As measured by the REER index, the total devaluation during the seven years was very large, around 130 per cent, and it radically changed the environment for India's trade policies. During the 1980s domestic prices of tradeables were delinked from international prices by the import control system backed up by very high tariffs. In addition manufactured exports, although growing faster than domestic production, were very small in relation to total manufacturing output — about 6 per cent in the mid-1980s. Hence overall the massive Rupee devaluation did not directly pass through to domestic industrial prices. It principally affected them indirectly in a very minor way through increases in export prices and in the prices of intermediates and capital goods that were allowed to be imported, which in turn increased manufacturing costs. However, the devaluation showed up in very big increases in border prices expressed in Rupees, which led to a steep decline in average implicit manufacturing protection, as measured by the excess of domestic ex-factory prices over border prices. Consequently, implicit protection declined from a range of about 50–60 per cent in 1986, to between minus 10 per cent and zero in 2003. This had a number of very important repercussions on manufacturing trade policies. First, it made the liberalisation program that started in 1991 quite painless, including especially the abolition of nearly all import licensing of manufactured intermediates and of machinery and equipment, the removal of a major export subsidy, and a pre-announced tariff reduction program that continued into the mid-1990s. Secondly, many Indian manufacturing firms that had felt vulnerable to import competition, now found that — following the correction of the earlier exchange rate overvaluation — they could not only easily compete with imports but could out-compete foreign manufacturers in export markets. Combined with new sweeping domestic deregulation of manufacturing that accompanied the trade policy program, this created a new momentum in the manufacturing sector in terms of investment, productivity improvements and expansion.

From 1993 to 2007

After 1993 and still continuing in mid-2007, the exchange rate has been managed by regular adjustments of the nominal rates which have stabilised the REER index at its post-devaluation level within a narrow range of about 10 per cent (Figure 7.3). The size of the devaluation up to 1993 probably overshot the decline needed to re-establish foreign exchange balance and to support the 1991/92 trade policy reforms, but maintained at this level for the next 14 years (by far the longest period of real exchange rate stability in India's independent economic history) it also proved adequate to support the final removal of the import licensing system between 1998 and 2001, and the new tariff reduction program in manufacturing which started in 2003/04. The period since 1993 can be divided into three subperiods: 1993 to 2001, 2001 to 2004, and 2004 to the present.

1993 to 2001: After the 1991/92 reforms producers of most intermediate materials and capital goods were no longer protected by import licensing, and between 1993 and 1996 manufacturing tariffs were cut by more than half. But as is apparent from Figure 7.2, the devalued exchange rate plus manufacturing tariffs (after the cuts they averaged about 30–40 per cent) were more than sufficient to fend off competitive pressures on the import

side. Tariff protection was also reinforced by anti-dumping which India began to use for the first time in the early 1990s, and which was initially mainly applied to manufactured intermediates. In addition, in 1995 about 36 per cent of manufacturing production was still protected by some kind of explicit non-tariff barrier (Figure 7.1).[26] This included the entire textile and garment sector as a result of the continuing *de facto* ban on imports of consumer goods.

During the second half of the 1990s this began to change, in large measure as a response to international pressures linked to the Uruguay Round agreements and the negotiations associated with them.[27] Following the loss of an important case at the WTO,[28] starting in 1998, the general import licensing system was gradually dismantled, and on April 1, 2001 the last 715[29] of 2714 tariff lines were removed from the restricted list and the system itself was abolished. At the same time, however, to provide additional security to domestic firms, between 1997 and 2001 tariffs were increased through the use of para-tariffs[30] applied on top of Customs duties. Hence, despite the phase-out of import licensing, during this period most manufacturing firms remained insulated from import competition. This is consistent with the implicit nominal protection estimates, which suggests that manufactured good prices were on average about equal to or below world prices (Figure 7.2). The impact of world market conditions was mainly via manufactured exports, which, as already discussed, began to expand at a faster rate than overall manufacturing growth.

2001 to 2004. After almost 50 years of *de facto* autarchy, the lifting of the import licensing controls generated considerable apprehension as to how well domestic producers of manufactured consumer goods and agricultural products would fare in a more open import regime. To deal with these apprehensions, a ‘War Room’ was established in the Ministry of Commerce and imports of a list of 300 ‘sensitive’ products were monitored to ensure that prompt action would be taken to pre-empt or minimise disruption to local production. More substantively, during and following the Uruguay Round negotiations the government made sure it employed, or had on call, all the techniques for protecting or subsidising domestic producers that it judged to be compatible with the WTO regime.[31] For manufacturing, these included: (a) Leaving about 28 per cent of manufacturing tariff lines unbound (that is, with no WTO-mandated upper bound) while the others were bound at high levels — final goods at 40 per cent, intermediates at 25 per cent; (b) From 2001, specific tariffs on most textile fabrics and garments which are much too high to allow any low priced imports of these products into the Indian domestic market;[32] (c) New local content (TRIMS) rules for the auto industry, introduced in 1995 and dropped (following objections from other WTO members) in 2002; (d) The use of anti-dumping; (e) The continued use of State Trading Enterprises (STEs) to control imports of urea and petroleum products; (f) The use of tariff rate quotas

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26 In 1995 about two-thirds of tradeable GDP was still protected by non-tariff barriers: 84 per cent of agriculture, 40 per cent of mining and quarrying and 36 per cent of manufacturing.

27 For a brief description of these pressures and negotiations see World Bank (2004) Vol. II, pp 16–17.

28 Since 1955 India had used the GATT balance of payments provision (Article XVIII (b)) to justify its routine use of QRs. In December 1995 this longstanding practice was challenged at the WTO by the US, the EU and a number of other developed countries. India fought a long legal rearguard action at the WTO to preserve this practice, which it eventually lost after an appeal to the WTO Tribunal.

29 This last batch were mainly agricultural tariff lines. Most of the manufacturing and mineral tariff lines were removed from the import licensing system in 1999 and 2000.

30 A ‘Special Duty’ or ‘Surcharge’ from 1997 to 2001, and a ‘Special Additional Duty’ (known as the SAdd) from March 1998 to March 2004. See World Bank (2004), Vol. II, Table 3.6.

31 For more detail on these measures see World Bank (2004), Vol. II, pp 18–21 and pp 38–43.

32 For the protective effects of the specific duties on textile fabrics and garments see the section on textiles and garments in World Bank (2006) Vol. II.

(TRQs) to protect local producers of edible oils and powdered milk; (g) New rules on technical standards introduced in 2000, under the administration of the Bureau of Indian Standards; (h) New SPS rules, mainly applicable to imports of livestock and agricultural products, but also to processed foods.

After 2001, it soon became apparent that the 'war room' psychology had greatly exaggerated the danger of rapidly expanding imports to domestic industries. During the next couple of years existing tariffs and the measures mentioned above proved more than adequate to keep out competing imports, and eventually, without a formal announcement, the 'sensitive list' quietly disappeared from official publications and public discussion. At the same time, manufactured exports entered a new phase of rapid expansion, and this was supplemented by even faster growth of IT and outsourcing service exports. Together with increased capital inflow, these developments created a strong balance of payments, historically high foreign exchange reserves, and were accompanied by faster general economic growth.

2004 to the present. Responding to the new confidence that these developments created, in April 2003 a new, pre-announced program of drastic reductions in industrial tariffs commenced, which over the next four years reduced the average by approximately two thirds, from 33 per cent in 2002/03 to 12 per cent[33] in 2006/07 (Figure 7.2). These reductions included the abolition in March 2004 of the last significant para-tariff. In practically every year since Independence, protective para-tariffs of different types which supplemented Customs duties had been used, and greatly increased the complexity of the tariff system, so this change contributed to transparency and reduced transaction costs as well as reducing available protection. Following new tariff cuts introduced in the March 2007 budget, average industrial tariffs are probably now well below 10 per cent since most tariff lines that were previously at either 12.5 per cent or 10 per cent were cut to 10 per cent or 7.5 per cent.[34] Hence, as measured by average *ad valorem* industrial tariffs, from being one of the world's most protected manufacturing sectors, India's manufacturing is now a low protection sector by world standards. Moreover, as indicated earlier, because of the 'tops down' reduction process, the industrial tariff structure is very uniform. In 2006/07 over 80 per cent of industrial tariff lines were at the then general maximum of 12.5 per cent or below, leaving limited scope for high effective protection through escalated tariff structures. Tariff dispersion will have been further squeezed by the new reduced tariffs in force during 2007/08.

These new low industrial tariffs are now down in the vicinity of estimated average implicit protection rates, which have fluctuated around zero during the 15 years since 1992/93 (Figure 7.2). This means that the very considerable tariff redundancy that existed until as recently as 2003/04 or even 2004/05 appears to have been eliminated, and that for the first time since Indian independence, most manufacturing tariffs are now probably binding, so that on the import side the manufacturing sector is much more exposed to the ups and downs of conditions and prices in world industrial markets than it was in the past. On the export side, the greatly increased share of manufactured exports in manufacturing production is also exposing the sector to world markets. Some qualifications and implications of this new paradigm for Indian manufacturing are discussed in the concluding section.

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[33] Authors' estimates. According to the 2007 TPR report on India (WTO (2007)) the average (HS 25–97) was 11.9 per cent, and 14.1 per cent on the alternative WTO definition of 'non-agricultural'. The principal reason for the higher average on the WTO definition is that it includes fish & crustacean tariff lines (in HS Ch 3) for which India has set high agricultural style tariffs.

[34] The average level and distribution of the new tariff schedule has not so far been quantified.

7.4 Concluding Remarks

This chapter has focussed on the evolution of India's manufacturing trade policies and has omitted the separate history of India's agricultural trade policies. This is a very different and complex story which is well documented in numerous studies undertaken over the past 20 years.[35] During the 1970s and 1980s the agricultural sector was comprehensively protected against import competition by the import licensing system, parastatal and other government mandated import monopolies, prohibitively high tariffs, and important agricultural commodities such as rice and cotton were disconnected from export markets by export controls. Fertiliser production, imports and distribution were subject to detailed controls, and both producers and farmers were subsidised. Agriculture's principal non-traded inputs — canal water, electricity and credit — were also heavily subsidised. Despite the comprehensive protection against import competition that was in place for this extended period, in most years during the 1970s and 1980s, weighted average domestic agricultural prices turned out to approximate average border prices after adjusting for port and domestic transport and handling costs. It has been shown that these low prices could only be partly explained by the large input subsidies which steadily increased in real terms up to about 2000.

In contrast to agriculture, during the 1970s and most of the 1980s, as discussed in this paper, implicit protection of manufacturing was very high. Consequently, during this period the combination of low implicit protection of agriculture and very high implicit protection of manufacturing created a strong anti-agricultural bias in the incentive system. But all this changed to approximate neutrality after the 1986–1993 devaluations, following which implicit protection of manufacturing went to about zero, while implicit agricultural protection also remained at about zero as domestic agricultural prices continued to roughly track world agricultural prices, despite the massive devaluation and continued prohibitively high tariffs and other instruments protecting domestic agricultural markets against import competition.

Agriculture was deliberately left out of the 1991/92 reform program, and agricultural tariffs were not touched by the new tariff reduction program that started in 2003/04. In 2006/07 unweighted average agricultural tariffs were about 40 per cent,[36] almost four times the level of average industrial tariffs, and as judged by this criterion India's agricultural sector remains one of the most protected in the world. Moreover, agricultural tariffs are highly dispersed, with about 15 per cent in a range of 50–100 per cent. These high tariffs have been maintained despite very substantial tariff redundancy for most agricultural commodities, with domestic prices not only lower than duty inclusive import prices, but frequently also lower than cif prices. Symptomatic of current 'just in case' agricultural trade policies, current applied tea and coffee tariffs are 100 per cent despite the fact that domestic prices approximate export prices, since both these commodities are sold in auction markets in which both exporters and domestic traders compete. This separate and special treatment of agricultural trade policies reflects strong pressures from many farmer and processor interest groups, mediated through and supported by the Ministry of Agriculture. As discussed in a recent paper (Pursell et al., 2007), this opens up the possibility that as India develops, the earlier anti-agricultural bias paradigm will be reversed, since, unlike manufactures and minerals, upward pressures on domestic

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35 For example in Gulati, Hanson and Pursell (1990), Gulati and Kelley (1999), and Mullen, Orden and Gulati (2005). A recent extension and update with references to the literature on this topic is in Pursell, Gulati and Gupta (2007).

36 Authors' estimate. According to the 2007 WTO TPR report (WTO, 2007)the unweighted average of HS 01 to HS 24 was 42.7 per cent and 40.8 per cent using the WTO definition of agricultural tariff lines.

agricultural prices are not constrained by low tariffs. Thus, it is possible that in the future India will traverse a high protection, high subsidy path for its agriculture, similar to the path followed by most of the older developed countries as well as the developing middle income countries such as Korea.

The exclusion of agriculture from most of India's trade liberalisation reforms during the past 15 or so years, also has indirectly led to the continuation of trade controls and other interventions in manufacturing activities that are related to the agricultural sector. The principal interventions are TRQs and high tariffs (about 50 per cent or 80 per cent) protecting edible oil production. For sugar refining, detailed and highly variable interventions including the periodic use of QRs, high or low tariffs, export subsidies and production subsidies. The use of TRQs with high out-of-quota tariffs to protect domestic powdered milk production. High tariffs (mostly 30 per cent) protecting the domestic production of other processed foods, for example meat and fish preparations, confectionery, cereal preparations, fruit and vegetable preparations, juices and soft drinks. An STE monopoly over urea imports, price controls and production subsidies for the domestic urea industry, and uniform, subsidised and controlled nation-wide urea prices for farmers.

Apart from these agriculture-related exceptions to trade liberalisation in the manufacturing sector, the other principal exceptions are: specific import duties on most textile fabrics and garments, which are much too high in *ad valorem* terms for there to be any significant import competition in the low priced segments of domestic fabric and apparel markets;[37] prohibitively high tariffs (60 per cent) protecting the auto industry, even though domestic ex-factory auto prices are close to or below world prices; and STE control of petroleum product imports.

In addition to these exceptions, as noted previously, India has allowed itself plenty of scope to increase tariffs without facing WTO constraints, by leaving large numbers of industrial tariffs unbound and setting bound tariffs far above its present applied tariff levels. This leaves open the possibility that tariffs could be suddenly increased, and the resulting uncertainty for exporters to India and for Indian importers can be a serious import barrier.[38] In addition India has in place the normal armoury of WTO-sanctioned institutions and mechanisms which can be employed to restrict imports, including a highly developed and frequently used anti-dumping system, rules on technical standards administered by the Bureau of Industrial Standards, and SPS rules which, as in other countries, could potentially be applied to make life difficult for processed food importers.

Despite these actual and potential exceptions to liberal trade policies in India's manufacturing sector, the sector as a whole is now very open, and the orientation of trade policies is overwhelmingly towards even greater openness. This trend is unlikely to change as long as manufactured exports continue to flourish and are not drastically hindered by protectionist measures in importing countries, or by serious disruptions of the international economy.

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[37] There is evidence of considerable tariff redundancy in these specific tariffs, with typical domestic ex-factory prices about equal to or even below import prices, suggesting that there would be few imports were the specific tariffs abolished. This is not surprising as India is a major exporter of textiles and apparel. These and related issues are discussed in World Bank (2006), Vol. II.

[38] In recent years there have been a number of sudden tariff increases to prohibitive levels, but these have so far been confined to agricultural or processed agriculture products for example, tea, coffee, garlic, chicken parts. As in other countries, for most manufactured products, when domestic producers complain, anti-dumping is the main weapon that has been used to intimidate exporters from competing too strongly in the Indian market.

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8

Free Trade Arrangement Between India and Japan: An Exploratory Analysis*

Kaliappa Kalirajan and Swapan Bhattacharya

8.1 Introduction

One of the interesting events of the world economy over the past one and a half decade has been the phenomenal growth of regional trading agreements and significant increase in world trade emerging from these arrangements. The World Trade Organization (WTO) website informs that by July 2005, a total of 330 agreements have been concluded, of which 130 agreements were concluded prior to the inception of the WTO on 1 January 1995. Of the total regional trade agreements (RTAs) registered with the WTO, 188 are currently in force and there are 33 major regional trading blocs (RTBs) worldwide. Asia is not lagging behind other continents as far as the formation of regional blocs is concerned. As of now, there are 49 major sub regional and bilateral trade and cooperation agreements in the Asian region. All the RTAs registered with the WTO are either based on Article XIV of WTO or Article XII of the Enabling Clause.

The basic reason for this phenomenal growth of regionalism is generally attributed to the fact that it is almost impossible for all 151 members of WTO to come into consensus of any particular issue quickly. However, there is another important reason for the phenomenal growth of regional trading agreements, which has received less attention in the literature. This concerns the lack of focus on trade policy reforms and institutional and infrastructural inefficiency in implementing liberalisation policies effectively within concerned countries. As economic theory argues, liberalisation of trade through policy induced measures by reducing and then eliminating tariff and non-tariff barriers promotes efficiency of allocation of resources to productive uses, exploitation of scale economies, encourages competition, increases factor productivity and increases trade flows, thereby, promoting economic growth (Barro and Sala-i-Martin, 1995 and Wacziarg, 1997). However, reality seems to be different from theoretical predictions. In spite of instituting various measures of trade liberalisation in many countries, still there remain some country-specific barriers, which impede the growth of world trade (Kalirajan, 1999). For example, Elizondo and Krugman (1992) argue that trade flows are adversely affected when infrastructure development are concentrated on only some developed pockets of the country. Also, large government size (Rodrik, 1998), weak and inefficient institutions in home country (Wilson et al., 2004 Levchenko, 2004) and political lobbying (Gawande and Krishna, 2001) have been identified to constraint trade flows between countries.

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Empirical studies mentioned above show that inspite of implementing trade liberalisation in developing countries, they could not reap the benefit of the liberalisation fully because of country-specific trade-constraining effects of mainly institutional and infrastructural factors, which are not seriously addressed by proper reform measures. These constraints, which are otherwise called 'behind the border' constraints, would create a 'trade-gap' by reducing actual trade flows between countries from their potential levels. It is in this context, besides multilateral efforts, regional and bilateral efforts facilitate countries to address, particularly those non-tariff issues effectively in order to minimise the gap between actual and potential trade on the one hand and to extract the benefits of free trade on the other. This process evolves through progressive stages of trade and investment cooperation agreements among governments through several bilateral, regional and multilateral arrangements among different trading partners (Lawrence, 1996).

Recently, there has been active persuasion by both India and Japan to conclude free trade agreement between them. Though Japan has been always a promoter of multilateral agreements, of late due to the emergence of different FTAs initiated by the United States, Japan has felt an acute need for its own treaty with different countries to protect its market share in world trade. India, in the process of increasing its market share has been also keen in making FTAs within the Asian region.[1] The governments of Japan and India started negotiating a comprehensive Economic Partnership Agreement in January 2007. They expect to conclude a deal in 2009. The main objectives of this chapter are (i) to explore the feasibility of FTA between India and Japan, (ii) to measure the impact of 'behind the border' constraints on bi-lateral trade between India and Japan, (iii) to simulate the gains due to various preferential trade agreements (PTAs), and FTA between these two countries, and finally, (iv) to make policy prescriptions as inputs into the policymaking process of FTA between India and Japan.

The chapter is arranged as follows: Section II examines the feasibility of FTA between India and Japan by measuring the trade intensity indices. In section III, theoretical framework, data, and methodology of measuring the trade impacts of PTAs and FTA between Japan and India are discussed. Section IV deals with the gravity modeling including the impact of 'behind the border' constraints on trade flows, and simulation procedures measuring the trade impacts of PTAs and FTA. Simulation results are analyzed in Section V. Section VI provides policy conclusions of this study.

8.2 Feasibility of FTA between India and Japan: An Analysis of Trade Intensities

FTAs between any two countries or regions would provide maximum gains from trade to countries involved, if countries/regions exhibit significant potential for trade with each other. Therefore, it is imperative to examine whether there is any potential for increasing the trade between India and Japan. Whether there is any trade potential between any two countries can primarily be examined by measuring the intensity of trade between them.[2] If the intensity between two countries is low, it is obvious that two countries have much

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[1] FTAs negotiated by Japan are called 'Economic Partnership Agreements' (EPAs), as the government holds that the term 'free trade agreement' doesn't capture the broader integration of economic and social policies that these treaties aim to achieve between the partner countries. However, these EPAs are similar in coverage to a typical FTA from the US, or the EU, if less ambitious on the content.

[2] Export performance of two countries can also be measured through revealed comparative advantage (RCA) index.

trade potential to reap between them. Bilateral trade relationships between India and Japan, which is described in terms of import and export intensity indices, helps to identify how intensively the countries are trading with each other. Trade intensity index is defined as a ratio of the share of one country's trade with another country to the other country's share of world trade (Drysdale and Garnaut, 1982). When multiplied by 100, the value of index ranges from 0 to 100. If the value is 0, it implies no trade relationship between partner countries. On the other hand, if the value of import intensity index is more (or less) than 100, it indicates that country i is importing more (or less) from country j than might be expected from that country's share in total world trade. In export too, if the value is 0 or nearer to 0, it implies export link between these two countries is negligible and if the value is nearer to 100 that indicates that performance is significant and if it exceeds 100 it indicates that country i is exporting more to country j than might be expected from that country's share in world trade.

The Import Intensity Index between Japan and India (MII_{JIt}) is shown as follows:

$$MI_{JIt} = [M_{JI} / M_J] / [X_I / (X_w – X_J)]$$

Where:

MI_{JI} = Import intensity index of Japan with India

M_{JI} = Import of Japan from India

M_J = Total import of Japan

X_I = Total export of India

Xw = Total world export,

X_J = Total export of Japan

t = 1995……2005

Export Intensity Index (XII) can also be measured in the similar way:

$$XI_{JI} = [X_{JI} / X_J] / [M_I / (M_w - M_J)]$$

Where:

XI_{JI} = Export intensity index of Japan with India

X_{JI} = Export of Japan to its trading partner India

X_J = Total export of Japan

M_I = Total imports of India

Mw = Total world imports

M_J = Total imports of Japan

t = 1995…..2005

Similarly, the export intensity index (XI_{IJt}) and import intensity index (MI_{IJt}) for India can be constructed. Export and import intensity indices of both Japan and India are calculated from 1995 to 2005. The trends of export intensities and import intensities of both Japan and India are shown in Table 8.1. Export and import intensities of both India and Japan have declined over the years. Japan's import intensity index was 121.13 during 1995, which drastically declined to 55.45 during 2005. On the other hand, its export intensity index with respect to India was 72.10 during 1996 that too declined to 41.24 during 2005. These figures clearly indicate that Japan's imports from India have declined much more than its exports to India. This may be due to the fact that Japan's import items from India are basically composed of primary and intermediary goods, whose demands are inelastic compared to its exports items to India. Japan's both import and export intensities are well below 100, which implies that it is trading much less with

India than might be expected from Japan's share in world trade. This implies that Japan has much potential to increase its trade with India.

India's export intensity with respect to Japan has declined substantially over the years too, which may seen from the fact that export index has declined from 101.1 during 1995 to 46.95 during 2005. One can conclude from such a declining trend that India has not diversified its export basket over the years to Japanese market, and it basically exported the same items, whose demands have been declining over the years. It shows its commodity concentration in exports is more than in its imports from Japan. In the import front also, trade intensity index has declined. During 1995, import intensity index was 73.74, which declined to 48.13 during 2005. However, this downturn is much less pronounced compared to the downslide in exports. Downward trend in imports may be attributed to the fact that India mainly imports machinery, transport equipments and capital goods from Japan. Since increasing number of Japanese companies are operating in India in these lines of production, its demand for imports has been less pronounced. The overall implication is that both India and Japan do have substantial potential to increase their trade between them. Next, it is important to identify how much tariffs and other non-tariff barriers constrain both India and Japan from realising their trade potential with each other.

Table 8.1: Import and Export Intensities of Japan and India, 1995–2005

Year	MI_{JIt}	XI_{JIt}	MI_{IJt}	XI_{IJt}
1995	121.13	72.10	73.74	101.10
1996	115.21	74.77	70.54	88.98
1997	111.24	69.08	69.65	86.59
1998	114.75	83.35	88.13	94.58
1999	100.03	67.40	72.78	82.93
2000	88.10	66.28	51.18	67.44
2001	79.92	58.35	66.86	60.50
2002	68.80	47.41	47.29	66.38
2003	61.21	50.69	56.84	51.60
2004	58.83	47.05	48.68	49.21
2005	55.45	41.24	48.13	46.95

MI_{JIt} = Japan's Import Intensity Index with respect to India.

XI_{JIt} = Japan's Export Index with respect to India.

MI_{IJt} = India's Import Intensity Index with respect to Japan.

XI_{IJt}= India's Export Intensity Index with respect to Japan.

J= Japan; I=Japan; t= 1995…………2005.

8.3 Theoretical Framework, Methodology, and Data

Theoretical Framework

Analytical tool for identifying the factors constraining trade flows and measuring the impact of preferential trading arrangements (PTAs) and free trade arrangement (FTA) on trade flows between countries is the well-known gravity model popularised by Tinbergen (1962), Anderson (1979), Bergstren (1996), Frankel (1993), and Deardorff (1995) among others. Trade flows can be restricted by 'natural barriers' (for example, distance between countries) and restrictive policy oriented 'artificial' barriers in the form of high tariff and non-tariff barriers.[3] In order to overcome the 'artificial' barriers, it is argued that countries are vying for regional and bilateral trading arrangements.

Frankel's (1993) model was extensively used in the literature in the context of examining the impact of regionalism on trade flows between countries. There are two particular limitations concerning Frankel's (1993) modeling and estimation. First, he uses a pooled cross-country gravity equation using trade data, which means treating coefficients of explanatory variables as the same for imports and exports. Dhar and Panagariya (1996) have suggested using exports and imports separately in the gravity model to avoid the criticism. Secondly, while these conventional gravity model studies admit the importance of 'behind the border' constraints on home country's exports, usually, these factors are merged with the 'statistical random error term' with 'normal properties' by implying that they are randomly distributed across observations. However, such a modeling in empirical work does lead to incorrect estimates of potential trade and does not also reflect the reality. Therefore, the lack of any appropriate measures to account for this problem in empirical studies of international trade could be insightful. Recently, Anderson and van Wincoop (2003) as a way of tackling this problem suggested an approach to modify the conventional gravity model specification by including a multilateral resistance term to obtain more correct estimates. However, their modeling of the multilateral resistance term as a function of distance and tariffs only, ignores the presence and impact of variations in 'behind the border' constraints on home country's exports. Further, in the presence of heteroscedasticity, the OLS estimation of their log-linearised gravity model would lead to biased estimates.

Kalirajan (2007) suggested an alternative method without imposing heavy data requirements on researchers, which can be used in situations when researchers do not have full information on all restrictive 'policy induced' constraints in home country and in partner countries. The method involves measuring the combined effects of 'behind the border' constraints for a given level of 'beyond the border' constraints that exist in partner countries. The theoretical model followed in this chapter is as follows.

Following Drysdale and Garnaut (1982), and Baldwin and Taglioni (2006), and drawing on Kalirajan (2007), it is argued that trade flows between countries are negatively influenced by the following four factors: (a) geographical distance; (b) 'behind the border' constraints that emanate from the existing infrastructural and institutional inefficiencies and rigidities in home country; (c)'explicit beyond the border' constraints that emanate from tariffs and exchange rate on which home country does not have any control; and (d) 'implicit beyond the border' constraints that emanate from the existing infrastructural and institutional inefficiencies and rigidities in partner country on

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[3] Drysdale and Garnaut (1982) classified the resistances to trade as 'objective' and 'subjective' constraints, which respectively refer to 'natural' and 'artificial' barriers. Balwin and Taglioni (2006) grouped the resistances to trade into 'natural' and 'manmade' barriers referring to 'natural' and 'ariticial' constraints respectively. Kalirajan (2007) distinguished the constraints to trade flows by classifying them into 'natural', 'behind the border', and 'explicit beyond the border', and 'implicit beyond the border' constraints.

which home country does not have any control. Bi-lateral, regional, and multilateral trade agreements do aim at eliminating both ‘behind’ and ‘beyond’ the border constraints. Though geographical distance and ‘explicit beyond the border’ constraints are measurable, researchers may not have full information on ‘behind the border’ and ‘implicit beyond the border’ constraints. Then, the imprecision of excluding these factors in modeling gravity equations leads to heteroskedastic error terms and the log-linearisation of the empirical model in the presence of heteroskedasticity leads to inconsistent estimates because the expected value of the logarithm of a random variable depends on higher-order moments of its distribution (Silva and Tenreyro, 2003). Also, this imprecise specification affects the normality assumption of the error term. Fixed effects models proposed to tackle the issue of heterogeneity problem by Matyas (1997) are not formulated based on any theoretical ground.

In a sense, heteroscedasticity and non-normality are interrelated. Heteroscedasticity is a property of the conditional distribution of the dependent variable in a regression model, and the effect of heteroscedasticity with respect to the variables that move variances around is generally non-normality (Kalirajan, 1989). This kind of situation, where the structure of heteroscedasticity is unknown, is quite common in many empirical analyses in economics. This type of deviation from homoscedastic residuals appears to be mainly due to characteristics specific to observations that are not easily quantifiable. In the case of the standard gravity equation, the ‘behind the border’ and ‘implicit beyond the border’ constraints variables are not easily quantifiable as discussed by Roemer (1977: 318). In this situation, OLS estimation leads to biased results and the procedures developed for estimating stochastic frontier production functions (Aigner, Lovell, and Schmidt, 1977; and Meeusen and van den Broeck, 1977), can be used to estimate the gravity equation incorporating ‘behind the border’ and ‘beyond the border’ constraints along with geographical distance constraint factor and other factors influencing trade flows.

Methodology

Drawing on Dhar and Panagariya (1996), this chapter uses country-specific trade data for India and Japan. The selected sample sizes of the partner countries, which are fixed at 50 for both India and Japan, represent about 80 per cent of exports and therefore, the estimated models can be considered to be representative models for these economies in a general equilibrium framework. The analysis would measure the impact of PTAs only by the proportionate change in exports of Japan to India and vice versa in dollars.

A comparative static analysis of tariff reductions under different scenarios and its effects on increase in exports of both Japan and India has been undertaken. Four hypothetical scenarios in this study are as follows:

1. 25% across the board tariff cuts by both countries;
2. 50% across the board tariff cuts by both countries;
3. 75% across the board tariff cuts by both countries; and
4. 100% tariff cuts that is, free trade between India and Japan.

Data

Data on exports of both Japan and India with their 50 top trading partners in terms of rankings of total volume of exports are taken from the UN COMTRADE database provided through the online WITS software developed by the World Bank and UNCTAD. There are gaps in the COMTRADE database for some countries. In such cases, exports data were taken from IMF’s Direction of Trade Statistics. Both GDP and population data of the respective countries are taken from the online data provided by the

UN Statistical Division, UN and the World Development Indicators 2006. Tariff data for the analysis are taken from TRAINS CD-ROM compiled by UNCTAD provided in the WITS software. The variable REXR aims to account for significant changes in real exchange rate in Japan, India and its 50 top trading partners. REXR is an index with base 2000=100 for the real exchange rate of the domestic currencies of Japan, India and its 50 trading partners. REXR is calculated using the nominal exchange rate and GDP deflator from IMF's International Financial Statistics (exchange rate is market value and average for the period). Data on distance are taken from the US Marine Distance Calculator. The period of analysis is 2005. The computer software Frontier 4.1 is used to estimate stochastic frontier gravity model, which is explained in details in Coelli (1996).

8.4 Analysis of Empirical Results: Impact of Constraints on Trade Flows

Empirical Model

Deviating from the conventional gravity model and drawing heavily on Kalirajan (2007), this study has used the stochastic frontier gravity model, which facilitates incorporating the 'behind the border' and 'beyond the border' factors affecting free flow of trade into the empirical model. As discussed earlier, the impact of the 'beyond the border' constraints can be divided into two groups: 'explicit beyond the border constraints' and 'implicit beyond the border constraints'. Of these, the impact of 'explicit beyond the border constraints' on home country's exports may be measured from the coefficients of variables such as average tariffs and real exchange rate. As full information on 'implicit beyond the border' constraints, which are not under the control of home country, is not known, it is combined with all other left out factors including measurement errors and represented as a random variable with 'normal' properties. These two variables are included in the gravity model for both India and Japan as follows:

$$\ln X_{ij} = \alpha_0 + \beta_1 \ln (GDP_j) + \beta_2 \ln (Popn_j) + \beta_3 \ln (Dist_{ij}) + \beta_4 \ln (Tariff_j) + \beta_5 \ln (REXR_j) - u_i + v_{ij} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where

Xij = Exports of country 'i' to country 'j'

GDPj = Gross Domestic Product of country j (that is, importing country)

Popj = Population of country 'j' (i.n. population of importing country)

Dstij = Distance between country 'i' and 'j'

Tariffj = Average weighted tariffs of the importing country. Tariffs are MFN tariffs rather than *ad valorem* duties.

REXRj = Real exchange rate of the currencies of importing countries

u_i = Combined effects of 'behind the border' constraints that prevent concerned country (India/Japan)from reaching its potential with its partner country. In other worlds, exp(u), which is the ratio of actual to estimated exports, can be called as export efficiency of India/Japan.

v_i = Combined effects of 'beyond the border' constraints and 'usual statistical' errors.

i, and j = India and Japan respectively.

u takes values either 0 or greater than 0 and it is usually assumed to follow a truncated (at 0) normal distribution, $N(\mu, \sigma^2_u)$. When u takes the value 0, this means that the influence of 'behind the border' constraints is not an important barrier to exports. When u takes the value greater than 0, this means that the influence of 'behind the border' constraints is an important barrier to export flows. The double-sided error term v_{ij}, which is usually

assumed to be $N(0,\sigma^2_v)$, captures the influence on export flows of 'beyond the border' constraints existing in partner countries, which are not under the control of the exporting country, and other left out variables, including measurement errors that are randomly distributed across observations in the sample.

The analysis is done using total aggregated exports data and also using major commodity-specific data for both India and Japan. We have taken 10 major commodities at the 2-digit HS categories for both the countries. These commodities/commodity groups are selected on the basis of their importance in total exports to each other. These commodities are ranked from 1 to 10 for both India and Japan, the total of which cover more than 80 per cent of total exports to its trading partner (that is, India and Japan). In the case of Japan, 10 highest ranking commodities exported to India at the 2-digit level are: boilers, machinery and machine parts (HS 84), electrical machinery equipments and parts (HS 85), motor vehicles (railway/tramway) rolling stock (HS 87), iron & steel (HS 72), optical photo, cinematic and measurement tools (HS 90), organic chemicals (HS 29), plastic and articles of plastic (HS 39), articles of iron and steel (HS 73), photographic and cinematic goods(HS 37) and rubber and articles of rubber (HS 40). India's top 10 commodities/commodity groups to its total exports to Japan during 2005 are: natural/cultured pearls, precious stones (HS 71), ores, slag and ash (HS 26), mineral fuels, oils and products of these items (HS 27), fish and fish proucts (HS 03), residues and waste from the food industry (HS 23), organic chemicals(HS 29), clothing and clothing accessories (HS 62), boilers, machinery and machine parts (HS 84), cotton (HS 52) and iron and steel (HS 72).

Analysis of Results

Table 8.2 shows the MLE estimations of the stochastic frontier gravity model for India's exports to Japan and Table 8.3 shows the MLE estimations for Japan's exports to India. The coefficients of these equations do confirm the theoretical predictions in terms of signs. The coefficients of all variables are significant at least at the 10 per cent levels in both cases. The bigger is the trading partner, the more significant is the bilateral trade due to higher GDP and thus due to the surging domestic demand of the importing country. The more is the distance between two trading partners, higher is the transaction cost that adds to the total cost, therefore, less is traded between the countries. Higher the population of the importing country, higher will be the trade between two countries because of higher domestic demand of the importing country. Higher is the tariffs in the importing country, less is the trade due to trade costs. Finally, higher real exchange rate means export earnings are more, therefore, more will be the exports that is, relationship between real exchange rate and exports is positive and it is negative on imports.

The important results of Tables 8.2 and 8.3 are the significance and magnitude of the estimate of '*gamma*', which is a ratio of the variance of u showing the combined effects of 'behind the border' constraints to total variance of exports of home country. These results indicate that a very highly significant amount of variation in exports between India and its partner countries including Japan is due to its 'behind the border' constraints involving infrastructural and institutional inefficiencies and rigidities. Similar is the case with Japan's exports to its partner countries including India.

In terms of export efficiency, which is shown in Table 8.4, mean efficiencies for Japan are much low in photographic and cinematic goods (HS 37) and machinery and machine parts (HS 84) and mean efficiency is less than average in products groups belonging to iron and steel. In other categories mean efficiency is reasonable. As only cross section data of the countries are used in this chapter, which ignores the dynamic effects, the results need to be interpreted with due care. In the case of exports of India to its trading

partners including Japan, mean efficiency of all products/product categories are reasonable, barring HS 29, HS 52, HS 62, and HS 72. Thus, India appears to be less efficient in exporting particularly fish and fish products (that is, purely primary goods). In exporting organic chemicals, India's efficiency is lower than that of Japan. Overall, India and Japan could increase their exports to their partner countries by about 40 per cent and 36 per cent respectively by eliminating the existing 'behind the border constraints' in India and Japan.

8.5 Simulation Results

Next, the analysis concerns working out the impact of PTAs and FTA on exports of both India and Japan to each other only. This exercise is a hypothetical scenario in which two countries start with a tariff reduction of 25 per cent at the initial stage and gradually reduce to 50 per cent in the second phase, 75 per cent in the third phase and complete elimination of tariffs in the final phase.

Given the estimated parametric values of β_4 from the fitted regression equation (1) for 10 commodity groups at 2-digit HS categories and total exports, which are given separately in Table 8.4 for convenience, the percentage increase in exports of Japan to India and vice versa due to changes in tariff rates at different scenarios as mentioned earlier in the methodology are worked out. The methodology for calculation of the increase in exports of one country due to PTAs and FTA to the markets of other countries is as follows:

$$[\exp \{ \beta_4 \log ((TRI, J)\ 1 / (TRI, J)\ 0) + ½\ \sigma^2 \} – 1] * 100$$

An increase in exports of Japan to India due to change in tariffs of the latter country.

$$[\exp \{ \beta_4 \log ((TRJ, I)\ 1/ (TRJ, I)\ 0) + ½\ \sigma^2 \} – 1] * 100$$

An increase in exports of India to Japan due to a change in tariffs of the latter country. Where,

$$\sigma^2 = \sigma^2\ \beta_4 \log (TRI, J) + \beta_4 \log (TRJ, I)$$

In the hypothetical comparative-static analysis, it is shown in Table 8.5 that if Japan completely eliminates tariffs on its imports from India, total exports of the latter to the former will increase by 0.3 per cent (that is, even less than 1 per cent). Most significant increase in exports will be in HS 62 that is, apparel and clothing, whose exports to the Japanese market will increase by 0.73 per cent. These increases are expected under FTA with the assumption that there are no 'behind and beyond' the border constraints in India and Japan respectively. However, if 'behind the border' constraints alone are taken into account, then increases due to FTA would reduce to 0.18 per cent (60% of 0.3 per cent) and 0.44 per cent (60% of 0.73 per cent) respectively. However, in the case of textiles and clothing, India is unlikely to withstand strong competition from China, which has already captured substantial share of the Japanese market. Therefore, it is unlikely that India will get a better foothold in Japanese market, if two countries go ahead with the FTA.

Table 8.6 shows the likely increase in Japan's exports to India due to different PTAs and FTA at aggregated and disaggregated level. The simulation results show that total exports from Japan to India would increase by 2.5 per cent due to FTA. The most significant increase in Japanese exports to the Indian market would be in HS category 90 consisting of optical, photographic, cinematographic, measuring and checking machineries, which would be 3.24 per cent. However, if the 'behind the border' constraints alone are taken into account, then these increases would reduce to 1.6 per cent (64% of 2.5 per cent) and 2.1 per cent (64% of 3.24 per cent) respectively.

Table 8.2: Maximum Likelihood Estimates of the Stochastic Frontier Gravity Equation for India's Exports to Partner Countries Including Japan

Variables	Total Exports	HS 3	HS 23	HS 26	HS 27	HS 29	HS 52	HS 62	HS 71	Hs 72	HS 84
Constants	14.04	10.04	18.57	6.36	11.48	9.14	12.41	7.86	6.16	11.33	10.12
	(7.57)	(2.77)	(3.73)	(2.11)	(4.04)	(10.02)	(5.96)	(3.73)	(1.94)	(5.33)	(4.26)
GDP	0.31	0.68	0.72	0.65	0.29	0.55	0.17	0.42	0.68	0.2	0.31
	(4.78)	(4.79)	(3.64)	(3.16)	(1.90)	(11.76)	(1.89)	(3.51)	(3.64)	(1.83)	(3.01)
Population	0.15	0.06	-0.211	0.089	-0.11	0.059	0.15	-0.3	-0.18	0.073	0.05
	(1.97)	(2.33)	(-1.97)	(2.34)	(-2.59)	(1.96)	(1.24)	(-1.9)	(-1.79)	(1.84)	(1.87)
Distance	-0.7	-0.9	-2.32	-0.68	-0.36	-0.51	-0.52	-0.14	-0.45	-0.4	-0.38
	(4.15)	(2.20)	(-5.61)	(-1.93)	(-4.71)	(-5.03)	(-3.6)	(-2.9)	(-2.2)	(-2.1)	(-1.81)
Tariff	-0.14	-0.07	-0.3	-0.053	-0.035	-0.17	-0.11	-0.08	-0.28	-0.12	-0.062
	(-2.14)	(-1.88)	(-3.12)	(2.49)	(2.36)	(-6.65)	(-1.8)	(-1.9)	(-2.02)	(-1.86)	(1.96)
REXR	0.03	0.01	0.35	0.19	0.026	0.08	0.033	0.19	0.026	0.083	0.035
	(-.54)	(-.71)	(3.36)	(-2.43)	(-2.33)	(2.30)	(2.61)	(-2.63)	(-2.0)	(1.93)	(-1.88)
σ^2	0.47	4.59	2.4	3.62	1.66	1.13	0.56	0.98	3.5	0.76	0.52
	(3.21)	(2.54)	(2.50)	(3.91)	(2.14)	(2.70)	(2.83)	(2.84)	(5.43)	(3.60)	(3.07)
Γ	0.64	0.96	0.65	0.67	0.51	0.91	0.74	0.65	0.72	0.59	0.64
	(4.01)	(22.93)	(6.00)	(5.05)	(4.30)	(13.00)	(6.01)	(5.22)	(5.34)	(3.07)	(7.84)
M	-0.09	0.43	-0.12	-0.1	-0.059	0.36	-0.09	0.089	-0.0097	-0.094	-0.092
	(-2.05)	(2.23)	(-1.88)	(-1.91)	(-2.04)	(2.77)	(-2.0)	(1.93)	(-1.87)	(-2.04)	(-2.09)
Log Likelihood Function	-52.08	-84.15	-92.8	-103.11	-83.69	-47.46	-56.13	-70.38	-102.28	-63.91	-54.42

* Values in the brackets are t-ratios.

Table 8.3: Maximum Likelihood Estimates of the Stochastic Frontier Gravity Equation for Japan's Exports to Partner Countries including India

Total Exports	HS 29	HS 37	HS 39	HS 40	HS 72	HS 73	HS 84	HS 85	HS 87	Hs 90
23.75	13.83	13.96	17.76	12.56	26.71	19.21	20.59	17.09	8.25	18.31
(4.50)	(3.34)	(35.59)	(4.01)	(5.80)	(18.06)	(8.44)	(5.39)	(5.20)	(4.41)	(6.47)
0.14	0.97	0.96	0.63	0.46	0.31	0.36	0.52	0.78	0.51	0.6
(2.05)	(5.71)	(19.73)	(4.46)	(4.48)	(2.37)	(3.17)	(4.57)	(5.41)	(5.17)	(4.90)
0.31	-0.011	-0.28	0.19	-0.0071	0.19	0.0029	0.19	-0.079	-0.035	0.16
(2.39)	(-2.07)	(-6.97)	(1.97)	(-1.86)	(2.28)	(-1.93)	(1.97)	(-1.9)	(-2.37)	(2.30)
-1.2	-1.67	-1.52	-1.66	-0.78	-2.23	-1.38	-1.39	-1.45	-0.064	-1.58
(-4.17)	(-6.15)	(-19.24)	(-8.4)	(-3.64)	(-12.97)	(-7.86)	(-5.3)	(-5.4)	(-2.49)	(-8.04)
-0.16	-0.19	-0.07	-0.2	-0.002	-0.1	-0.065	-0.096	-0.22	-0.095	-0.24
(-1.98)	(-1.86)	(-1.89)	(-2.3)	(-1.94)	(2.61)	(1.83)	(-2.4)	(-2.8)	(-2.15)	(-3.07)
0.13	-0.0006	0.012	0.03	0.03	0.055	0.056	0.06	0.07	0.036	0.044
(-1.94)	(-1.87)	(-2.38)	(2.44)	(-1.79)	(1.88)	(-1.98)	(-2.6)	(2.94)	(-1.78)	(-1.89)
0.71	1.4	2.67	1.03	0.58	1.02	0.75	0.75	0.85	0.51	0.67
(3.55)	(3.40)	(9.50)	(2.73)	(5.25)	(4.93)	(3.45)	(2.91)	(1.85)	(2.91)	(4.52)
0.66	0.56	0.89	0.62	0.58	0.61	0.68	0.72	0.37	0.72	0.68
(6.01)	(4.86)	(21.35)	(7.05)	(6.42)	(6.77)	(5.32)	(7.09)	(3.02)	(9.05)	(8.44)
-0.086	-0.096	-0.54	-0.094	0.08	-0.02	-0.09	1.47	0.29	-0.088	-0.079
(-2.05)	(-2.03)	(-1.96)	(-2.2)	(2.31)	(-1.92)	(-1.82)	(2.98)	(1.88)	(-1.96)	(-2.06)
-62.24	-79.33	-54.61	-71.74	-57.3	-71.53	-63.62	-61.55	-66.63	-54.19	-60.74

* Values in the brackets are t-ratios.

Table 8.4: Mean Efficiency* of Exports of India and Japan (Sectorwise), 2005

HS Cat	*Commodity Groups (India)*	*Mean Efficiency*	*HS Cat.*	*Commodity Groups (Japan)*	*Mean Efficiency*
71	Natural/cultured pearls, prec stone	0.62	84	Nuclear reactors, boilers, & machy.	0.47
26	Ores, slag and ash.	0.70	85	Electrical mchy equip parts thereof	0.74
27	Mineral fuels, oils & product of th	0.62	87	Vehicles o/t railway/tramway roll-stock	0.69
03	Fish & crustacean, mollusk & other	0.36	72	Iron and steel.	0.62
23	Residues & waste from the food industry	0.62	90	Optical, photo, cine, meas, checkin	0.70
29	Organic chemicals.	0.46	29	Organic chemicals.	0.61
62	Art of apparel & clothing access, n	0.61	39	Plastics and articles thereof.	0.68
84	Nuclear reactors, boilers, & machy	0.60	68	Articles of iron or steel.	0.60
52	Cotton.	0.69	37	Photographic or cinemographic goods	0.43
72	Iron and steel.	0.61	40	Rubber and articles thereof.	0.62
Total	All Commodities	0.60	Total	All Commodities	0.64

* Mean efficiencies are based on 50-country average

The present study thus indicates the urgency for India and Japan to eliminate their ‘behind the border’ constraints in order to realize the potential increase in their exports due to FTA.

Table 8.5: Likely increase in India's exports to Japan under different PTAs and FTA, 2005 (Value in US '000 $)

HS Code	Name of the Commodities	India's exports to Japan (2005) '000 $	MFN Tariffs (Wtd Avg) of Japan (2005)	Increase in Exports (Value in '000 US $)				Percentage Increase			
				Scen.I	Scen.II	Scen.III	Scen.IV	Scen.I	Scen.II	Scen.III	Scen.IV
71	Natural/cultured pearls, prec stone	488,605.659	0.37	126.55	253.10	379.65	506.20	0.03	0.05	0.08	0.10
26	Ores, slag and ash.	411,368.044	0.01	0.51	1.03	1.54	2.06	0.00	0.00	0.00	0.00
27	Mineral fuels, oils & product of th	225,733.470	2.31	45.63	91.25	136.88	182.51	0.02	0.04	0.06	0.08
03	Fish & crustacean, mollusc etc	224,521.846	1.98	77.80	155.59	233.39	311.19	0.03	0.07	0.10	0.14
23	Residues & waste from the food industry	133,528.577	0.23	23.03	46.07	69.10	92.13	0.02	0.03	0.05	0.07
29	Organic chemicals.	108,707.014	2.74	126.59	253.18	379.77	506.36	0.12	0.23	0.35	0.47
62	Art of apparel & clothing access, n	104,612.614	9.08	189.98	379.95	569.93	759.91	0.18	0.36	0.54	0.73
84	Nuclear reactors, boilers, mchy	72,068.754	0.01	0.11	0.22	0.32	0.43	0.00	0.00	0.00	0.00
52	Cotton	67,440.708	4.74	87.91	175.82	263.73	351.64	0.13	0.26	0.39	0.52
72	Iron and steel.	37,321.414	4.85	54.30	108.61	162.91	217.21	0.15	0.29	0.44	0.58
	All Commodities	2,481,606.235	2.12	1841.35	3682.70	5524.06	7365.41	0.07	0.15	0.22	0.30

Scenario I = 25% tariff cut, Scenario II = 50%t tariff cut, Scenario III = 75% tariff cut & Scenario IV = 100% tariff cut (that is, free trade)

Table 8.6: Likely increase in Japan's exports to India under different PTAs and FTA, 2005 (value in US '000 $)

HS Code	Name of the Commodities	Japan's exports to India (2005) '000 $	MFN Tariffs of India (Wtd.Avg)	Increase in Exports (Value in '000 US $)				Percentage Increase			
				Scen.I	Scen.II	Scen.III	Scen.IV	Scen.I	Scen.II	Scen.III	Scen.IV
84	Nuclear reactors, boilers, mchy & m	1,099,474.437	14.26	3919.626368	7839.253	11758.88	15678.51	0.36	0.71	1.07	1.43
85	Electrical mchy equip parts thereof	410,811.980	9.33	2108.081675	4216.163	6324.245	8432.327	0.51	1.03	1.54	2.05
87	Vehicles o/t railw/tramw roll-stock	405,091.575	37.96	384.4319047	768.8638	1153.296	1537.728	0.09	0.19	0.28	0.38
72	Iron and steel	247,401.974	20	1237.00987	2474.02	3711.03	4948.039	0.50	1.00	1.50	2.00
90	Optical, photo, cine, meas, checkin	217,915.158	12.96	1765.11278	3530.226	5295.338	7060.451	0.81	1.62	2.43	3.24
29	Organic chemicals	217,204.571	14.48	1493.933039	2987.866	4481.799	5975.732	0.69	1.38	2.06	2.75
39	Plastics and articles thereof	125,251.240	15	939.3843	1878.769	2818.153	3757.537	0.75	1.50	2.25	3.00
73	Articles of iron or steel	115,313.592	15	302.698179	605.3964	908.0945	1210.793	0.26	0.53	0.79	1.05
37	Photographic or cinematographic goo	75,071.353	15	281.5175738	563.0351	844.5527	1126.07	0.38	0.75	1.13	1.50
40	Rubber and articles thereof	67,575.039	14.83	50.10689142	100.2138	150.3207	200.4276	0.07	0.15	0.22	0.30
	All Commodities	3,439,909.518	15.36	21134.80408	42269.61	63404.41	84539.22	0.61	1.23	1.84	2.46

Scenario I = 25% tariff cut, Scenario II = 50% tariff cut, Scenario III = 75% tariff cut & Scenario IV = 100% tariff cut (that is, free trade)

8.6 Concluding Remarks

The Proposed India-Japan FTA is expected to provide a basic ground for strengthening and widening economic cooperation between two big countries of the Asian region. In this context, two important questions are: (a) how much increase in trade would be generated by the FTA? and (b) whether the expected increase in trade can be realized fully by India and Japan without any constraints? This study shows that only tariff-based approach to FTA won't be effective in improving intra-country trade since tariff level in Japan is already very low and India has been reducing tariffs over the years, though India's tariff rate is still amongst the highest in the world. What is equally important is to eliminate the existing 'behind the border' constraints in India and Japan, so that the expected increases in exports due to FTA can be realized fully by them. Using the gravity model as an analytical tool, this chapter has demonstrated how the conventional gravity model can be modified in terms of modeling and estimation to examine the impact of 'behind the border' constraints for a given level of 'implicit beyond the border' constraints on bi-lateral exports between India and Japan.

With the existing 'behind the border' constraints in India and Japan, these countries have been realizing only about 60% and 64% of their potential exports to each other respectively. This implies that both India and Japan can increase their exports without making any changes in 'natural' constraints and 'explicit beyond the border' constraints, but by improving their infrastructure and institutional performances effectively. Unless these trades restricting 'behind the border' constraints are not effectively eliminated, the benefits from PTAs and FTA cannot be fully realised between India and Japan. Though this chapter could not specifically identify what are those 'behind the border' constraints that need to be eliminated, which is beyond the scope of this chapter, some conjectures can be made. First, 'rules of origin' principle is to be well defined to arrest re-routing cheaper imports from different countries. Minimum value-addition norms should be strictly adhered to. Given the already existing regional agreements in operation in this region, this is bound to result a 'spaghetti bowl' type of phenomenon, where for a given product, there could be several and different tariff rates depending on what origin is assigned to it. Secondly, the harmonisation of standards and uniform certification procedures between India and Japan need to be well defined. The SPS (sanitary and phytosanitary standards) and TBT (technical barriers to trade) are most stringent non-tariff barriers that affect the prospects of Indian agricultural exports to the Japanese market. Japan is yet to make major reforms in its agricultural sector and its agricultural market is heavily protected through tariff rate quota (TRQ) and other non-tariff barriers.

Overall, this study shows that the major beneficiary of FTA between Japan and India will be Japan because of its lowest tariffs in the region. In the short run, India's gains from free trade are considered to be much less because of its higher tariffs compared to that of Japan. When India gives duty free access to Japan, tariff revenue previously collected on the imports from Japan turns into export revenues for the exporting firms of Japan, which is obviously very high because of higher levels of tariffs in India. In this process, Japanese firms will gain more compared to Indian exporters because of lower tariffs in the former country. Due to less or non-existing tariffs in the Japanese market , exporting firms of India have less to gain, at least in the short run, from the tariff free access to Japan. Conversely, when Japan gives duty free access to the exporters of India, tariff revenue previously collected from the imports from India turns into export revenues for the exporting firms of the latter country, which will be obviously very low because of lower tariffs in Japan.

The above description is the direct effect of free trade arrangements between Japan and India. Most of these effects are valid in the short run only. But as a second best solution, apart from the declining tariff revenues for India, it can gain substantially in some other ways. Increase in duty free imports from Japan might translate into at least partial reduction in consumer prices in India. Such reduction in consumer prices will be much higher compared to reduction in consumer prices in Japan for imports from India. Therefore, welfare gains of Indian consumers will be higher than the welfare gains of the Japanese consumers. Nevertheless, as long as India continues to have higher tariffs than Japan, the danger of potential losses from the transfer of tariff revenue to the Japanese firms in the form of higher profits will remain. As Panagariya has suggested, while thinking of FTA between two countries, one having higher tariff and the other lower tariff, it should be on a non-discriminatory basis first, and tariff levels of the high-tariff country should be brought down to the level of the low tariff country. Therefore, to extract maximum benefits from the free trade arrangements between Japan and India, it is desirable that the latter should bring down its tariff level to that of former country, if not in the short run, but in the long run and both should eliminate the existing ‘behind the border’ constraints.

There are a few caveats about the results of this analysis. As the gravity model does not take into account the possible impact of the terms of trade associated with the trade creation, the simulated results are generally upward biased. The estimates also give the results in a static framework, and the extent of intra-country trade will possibly further increase if the estimation is carried out in a dynamic framework, incorporating the effects of factors like terms of trade, scale economies, technology spill-over, investment inflows, and trade liberalisation. Due to lack of basic information to quantify the above cited variables, the estimation of the parameters related to these factors becomes difficult. For example, some price elasticities could be approximated, but information on scale economies do not exist. However, a number of existing studies have shown that the short-term impact is higher than the dynamic impact. The results of the simulations presented here serve the limited purpose of providing an estimate of the potential effects on bilateral trade between India and Japan in the simulated PTAs.

Finally, the formation of Japan-India FTA is a part of a bigger exercise in the Asian region, which has been undergoing for quite sometime. The ultimate objective of trade liberalisation and trade integration of this region is to integrate the entire Asian economies. At present, there are 49 major sub regional and bilateral trade and cooperation agreements in the Asian region of 47 countries. ASEAN has already formed a free trade union with PTA in vogue. Since India and China are two big emerging markets in the Asian region, it has been mooted for quite sometime to bring Korea, China, Japan and India into its fold to form a bigger and stronger JACIK (Japan-ASEAN-China-India-Korea) economic group. China has been playing a leading role in all FTAs in the Asian region. ASEAN and four dialogue partners: Japan, Korea, China and India (JACIJ) are all actively engaged in evolving the FTAs between the pairs. Through the complex web of FTA negotiations, it is expected that JACIK may be a reality, if not in the short run, must be in the long run.

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PART IV

TRENDS AND PROSPECTS FOR INDIA’S SOCIAL SECTOR

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9
Human Development in India: Past Trends and Future Challenges

Anil B. Deolalikar

9.1 Introduction

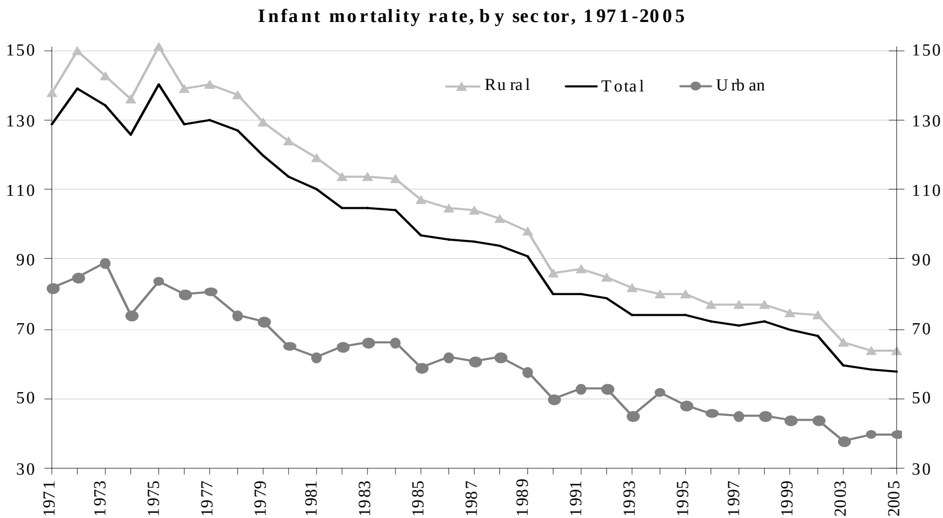
It is now 16 years since economic reforms were launched in India. The Indian economy has growth remarkably over this period; indeed, in the last decade, it has been one of the fastest growing economies in the world. The robust growth of the economy has certainly reduced poverty — with poverty incidence falling from 32 per cent in 1993–94 to 23 per cent in 2004–05 in the rural areas and from 28 per cent to 22 per cent in the urban areas (Sundaram 2007). But how has the Indian economy performed on broader indicators of human and social development? This paper looks at India's performance on five dimensions of human development — infant mortality, child nutrition, nutrient intake, educational attainment, and sex ratios — especially during the decade of the 1990s. The paper also discusses the challenges that remain going forward.

9.2 Infant Mortality

Health conditions have improved considerably in India over the last several decades. The infant mortality rate, which is one of the best indicators of overall health outcomes in a nation, has fallen from about 140 deaths per 1,000 live births in the early 1970s to only 58 in 2005, representing an annual rate of decline of 2.3 per cent per year (Figure 9.1). Infant mortality rates in the rural areas have fallen at approximately the same rate as those in the urban areas, so that the rural–urban divide has not narrowed appreciably during this period.

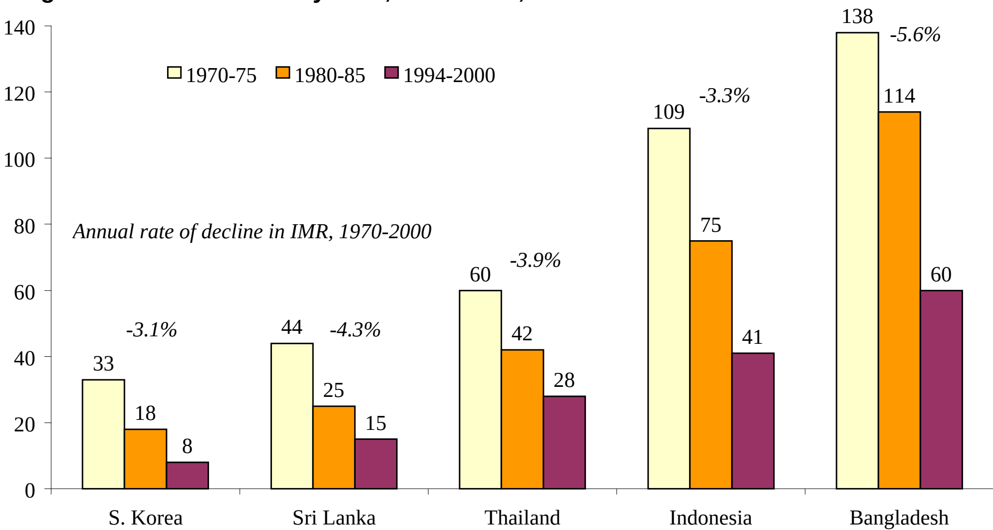
While a decline in the infant mortality rate of 2.3 per cent per annum is respectable, it is certainly not impressive in comparison to the experience of other low- and middle-income countries in Asia. Figure 9.2 shows that, over a comparable period, infant mortality rates in South Korea and Indonesia declined by about 3 per cent annually, while those in Sri Lanka and Thailand declined at 4 per cent annually. Most impressive, however, is the experience of neighboring Bangladesh — a country that is not only significantly poorer than India but whose economy has grown much less rapidly than India's over the last 2–3 decades. During the period 1970–2000, Bangladesh saw its infant mortality rate fall by 5.6 per cent annually! Thus, India's performance in infant mortality reduction has fallen significantly short of the experience of other developing countries.

Figure 9.1: Infant Mortality Rate by Sector, 1971–2005



Source: *SRS Bulletin*, Registrar General of India, various issues.

Figure 9.2: Infant Mortality Rate, 1970–2000, Selected Countries in Asia

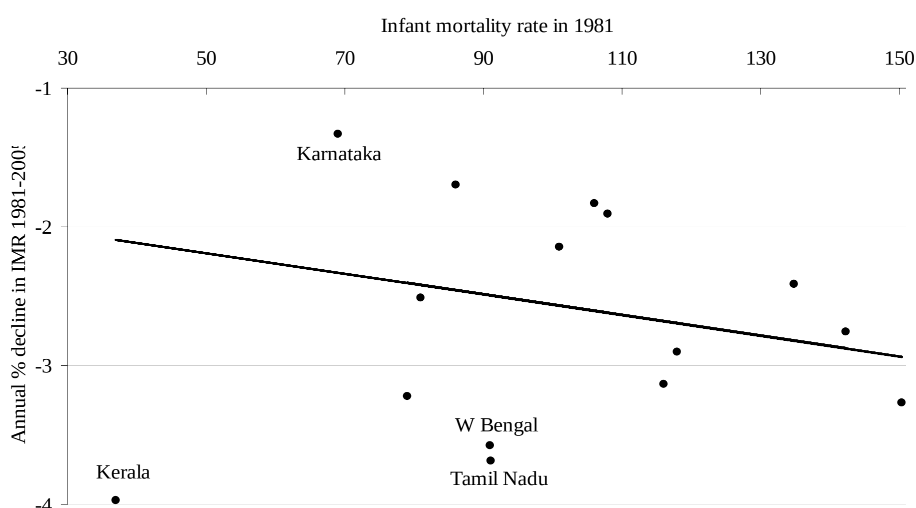


Source: World Development Report, World Bank, various issues.

An average infant mortality rate for India of 58 deaths per 1,000 live births masks very large intra-national variations. Kerala has an infant mortality rate of 14 — comparable to that observed for Russia, Macedonia, Thailand and Uruguay — while Orissa's infant mortality rate of 75 is as high as Zimbabwe's, Tanzania's and Senegal's infant mortality

rate. Further, the different states in India have experienced varying declines in infant mortality over the last quarter century. Kerala, which had the lowest rate of infant mortality in 1981, experienced the largest decline in infant mortality between 1981 and 2005 (Figure 9.3). But Bihar and Uttar Pradesh, which had among the highest infant mortality rates in the country in 1981, were also among the top performers in IMR reduction over the same period. Andhra Pradesh and Karnataka — states that are normally perceived to be good human development (HD) performers — had the slowest rate of IMR decline over the 25-year period.

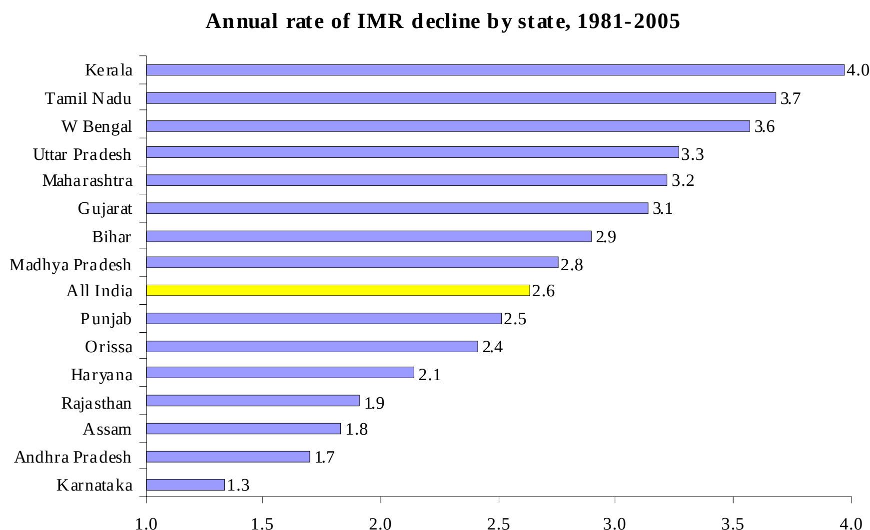
Figure 9.3: Annual % Decline in Infant Mortality Rate across States, plotted against State's Level in 1981



Source: *SRS Bulletin*, Registrar General of India, various issues.

Is there any evidence of convergence in infant mortality rates over time? Figure 9.4 shows that, if the experience of Kerala is ignored, a generally-inverse relationship is observed between the initial level (in 1981) of infant mortality in a state and the subsequent (1981–2005) rate of decline in infant mortality experienced by that state. States that had the highest level of infant mortality in 1981 (for example, Uttar Pradesh and Madhya Pradesh) experienced the most rapid decline in infant mortality over the 1981–2005 period. States that had lower levels of infant mortality, such as Punjab, experienced smaller rates of decline. It is apparent from Figure 9.4 that not only Kerala but also West Bengal and Tamil Nadu are positive outliers — in the sense that infant mortality has declined more rapidly in these states than would be expected based on their initial levels of infant mortality, while Karnataka is a negative outlier (that is, it has performed worse than would have been expected). However, because of the generally-inverse relationship seen in Figure 9.4 between initial levels of and relative declines in infant mortality, there was some convergence in infant mortality rates over the last quarter-century.

Figure 9.4: Annual Rate of IMR Decline by State, 1981–2005



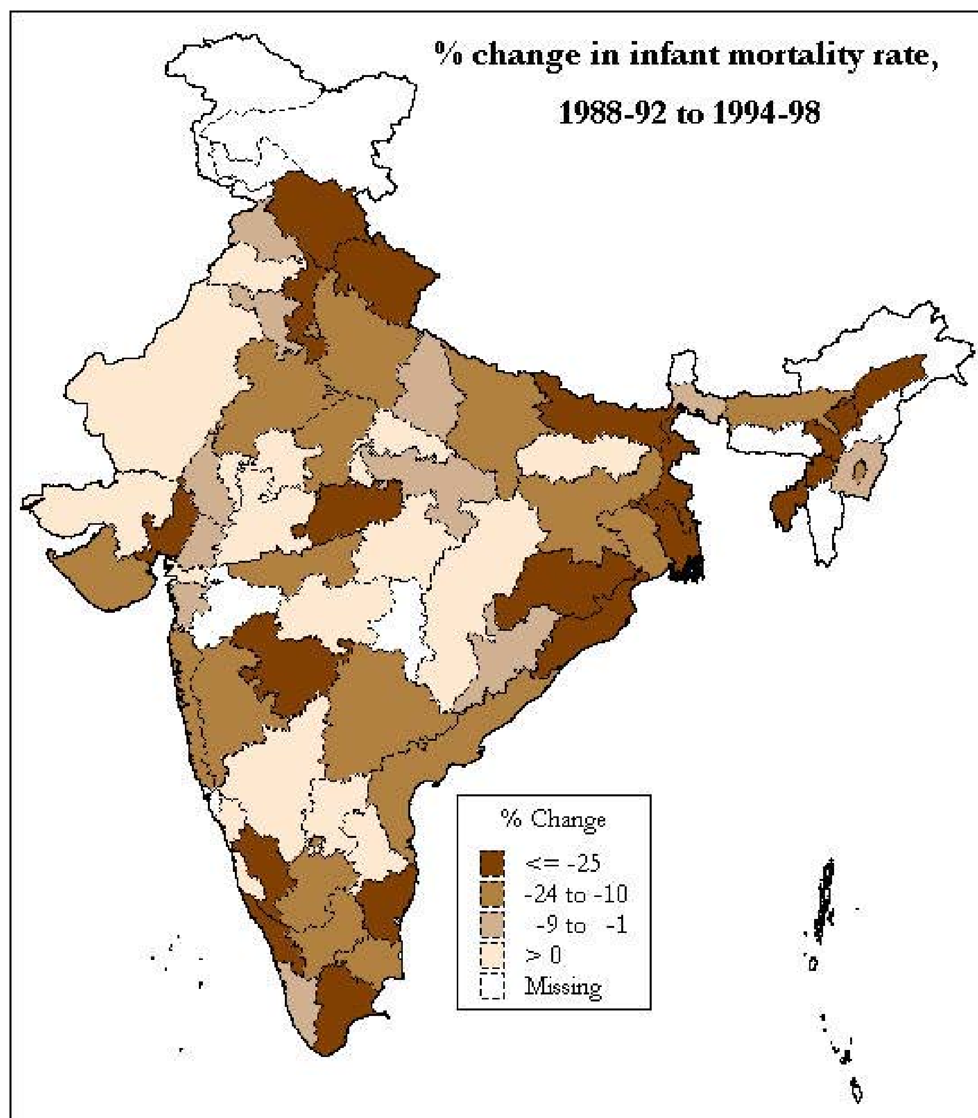
Source: SRS Bulletin, Registrar General of India, various issues.

There are even larger variations in infant mortality at the intra-state level. Regional estimates of infant mortality, derived for two years — 1988–92 and 1994–98 — from the first two rounds of the National Family Health Survey, are shown in Figure 9.5. The data suggest that, while infant mortality fell in the majority of regions in the country, a number of regions experienced no change or even an increase in infant mortality. These regions were distributed throughout the country — in the West, Center, and the South.

Why have infant mortality rates in India not fallen more rapidly than — or at least as rapidly as — in other Asian countries? What could bring about more rapid declines in infant mortality in the future? Obviously, there are multiple reasons for the high levels of infant and child mortality found in India, including a high incidence of poverty, low levels of maternal education, and poor access to health services and infrastructure. As an example of the latter, consider that nearly 60 per cent of all births in India take place at home and without a health professional in attendance. Any delivery complication, such as umbilical cord sepsis, puts these births at very high risk of premature death. The latest (third) round of the National Family Health Survey (NFHS-3) conducted in 2005–06 indicates that, in states such as Bihar and Uttar Pradesh, only a fifth of all births take place in institutions (Figure 9.6). While most states experienced increases in the proportion of institutional births between 1992–93 and 2005–06, the increases were, for the most part, modest.

A large number of infants and children also die prematurely because of preventable diseases. This is why child immunisation has an extremely important role to play in preventing premature child deaths. The NFHS-3 paints a dismal picture of the expansion of child immunisation in the country during the 1990s. The per cent of children aged 12–23 months who were fully immunised (against BCG, measles, and three doses each of polio and DPT) increased merely from 36 per cent in 1992–93 to 42 per cent in 1998–99 (Figure 9.7). The increase from 1998–99 to 2005–06 was even more anemic — to 44 per cent. Many states, including prosperous states such as Haryana, Punjab, Maharashtra and Gujarat, saw their full-immunisation rates fall between 1998–99 and 2005–06.

Figure 9.5: Regional Estimates of the Change in the Infant Mortality Rate, 1988–92 to 1994–98

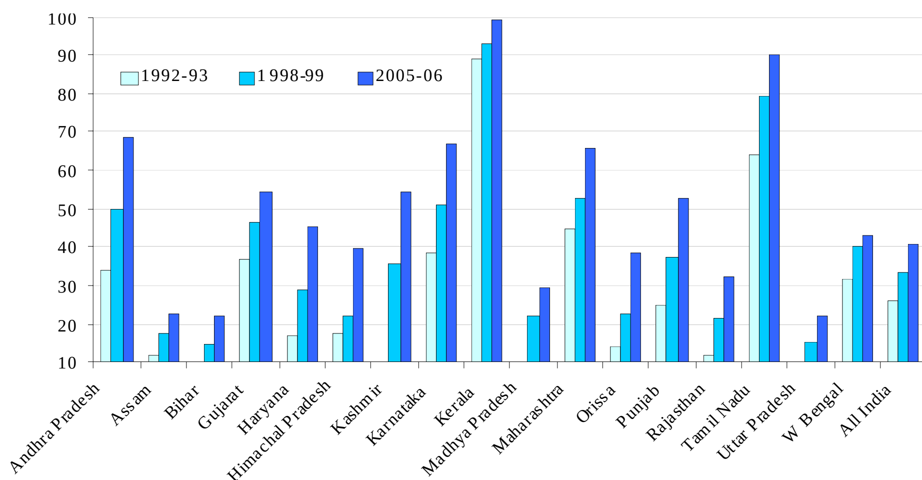


Source: Author's calculations from Rounds 1 and 2 of the National Family Health Survey.

According to the NFHS-2, health-services coverage is poor in India. Only 13 per cent of rural residents reported access to a primary health center in 1998–99, while 33 per cent had access to a sub-center. In states such as Bihar and Orissa, the access rates were much lower. In addition to lack of access, there is often widespread absenteeism of health workers at primary health centers and sub-centers; most government health facilities are in disrepair; and the availability of drugs and medical supplies at public health facilities is typically nonexistent. For example, a recent survey across India indicates that 58 per cent of health workers in primary health facilities in Bihar were absent from their positions on

any given day (Chaudhury et al., 2003). In the country as a whole, 43 per cent of primary health care workers are typically absent from their place of work at any given point in time.

Figure 9.6: % of Births Occurring in an Institution (as opposed to home), by State, 1992–93 to 2005–06



Source: Author's calculations from Rounds 1, 2 and 3 of the National Family Health Survey.

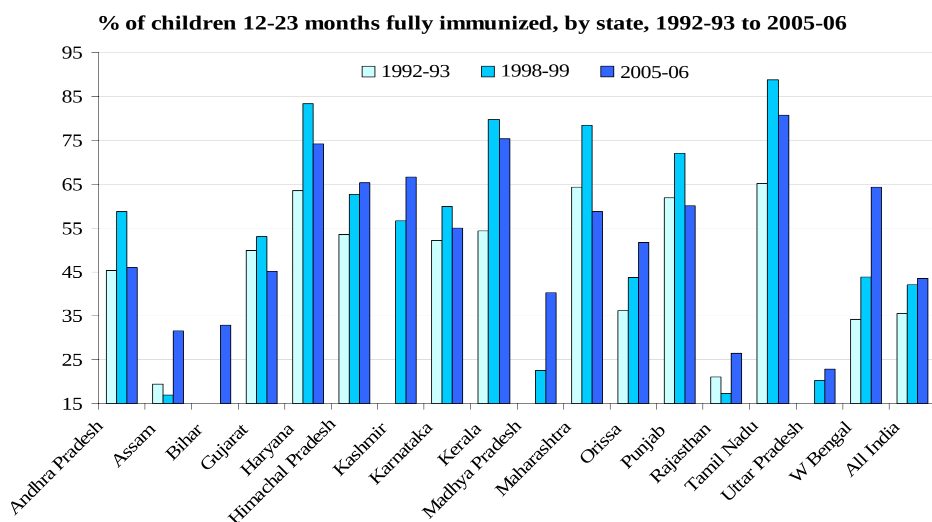
In response to these challenges, the Indian government has recently launched the National Rural Health Mission (NRHM). A central goal of the mission is to vastly improve health infrastructure and the delivery of health services in the country by increasing public expenditure on health from the current 1.1 per cent of GDP to roughly 2–3 per cent of GDP within the next five years. The NRHM has a clear geographical focus on rural areas, especially in the 18 states that have weak health outcomes and infrastructure, including eight particularly disadvantaged states.[1]

The mainstay of the NRHM, which will cover approximately 250,000 villages in the 18 states, is an Accredited Social Health Activist (ASHA) in each village. ASHAs, who would be drawn from local communities, would function as intermediaries between the village population and the local health centers or sub-centers. They would be trained in sanitation, hygiene, contraception, child immunisation, and primary medical treatment of diarrhea, minor injuries, and fevers. ASHAs would be expected to escort patients needing medical attention to the health center, as well as deliver direct observed short course therapy for tuberculosis and oral rehydration, to give folic acid tablets and chloroquine to patients, and to alert authorities to outbreaks of diseases. Most importantly, ASHAs would receive performance-based compensation for promoting universal immunisation, referral and escort services for RCH, construction of household toilets, and other health-care delivery programs.

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[1] The 18 focus states are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal, and Uttar Pradesh. EAG states are Bihar, Chattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and Uttaranchal.

Figure 9.7: % of Children 12–23 months Fully Immunised, by State, 1992–93 to 2005–06



Source: Author's calculations from Rounds 1, 2 and 3 of the National Family Health Survey.

Of course, this is not the first time the government has tried out a health functionary program at the village level. There have been a number of such programs over the last three or four decades — the Auxiliary Nurse Midwives, the Lady Health Visitors, Village Health Guide, *anganwadi* worker, etc. Many of these schemes have failed to make much of a dent in rural health outcomes, in some part because they did not have the right incentives in place to make the village health workers accountable to the community. Currently, the plan is for ASHAs to be accountable to the village panchayats and for their compensation to be linked to their performance. How these employment contract details are operationalised will have an important bearing on the eventual success of the ASHA program.

Thus, the major challenge in improving health in the next decade or two will be to dramatically improve the appalling health infrastructure in the country and improve the rural population's access to health services, while at the same time providing incentives for health workers to be accountable to the communities they serve. Within the delivery of health services, the highest priority should be placed on ensuring that all pregnant women have access to prenatal care, that all births take place in institutions or in the presence of trained health personnel, and that all children be immunised against preventable diseases. The experience of Kerala and Tamil Nadu suggests that these interventions will significantly reduce the high rates of maternal, infant and child mortality in India.

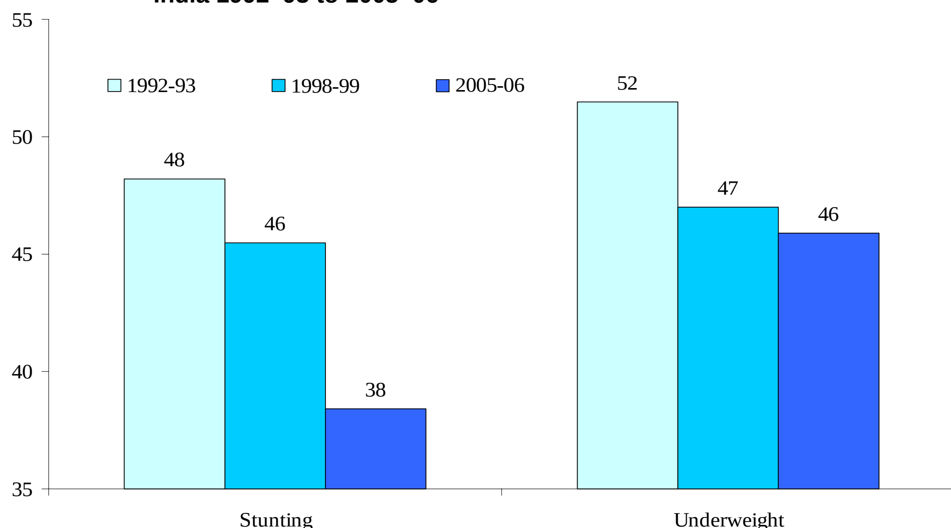
9.3 Child Malnutrition

Poor nutrition among children, as manifested in stunting, underweight and wasting, is another major health problem in India. Malnutrition is known to significantly increase the likelihood of premature death in infants and children, with some estimates indicating that child malnutrition is responsible for half or more of child deaths in the developing

world.[2] There is also a large body of international evidence showing strong associations between under-nutrition in childhood on the one hand and low levels of school performance, cognitive development, health, and adult labor productivity on the other hand. Thus, child malnutrition in India is likely to have very high economic and human costs.[3]

Child malnutrition rates in India are extraordinarily high — among the highest in the world. In 1992–93, the first National Family Health Survey had estimated that nearly one-half of all children under 3 years of age were either underweight or stunted.[4] (This indicates that Indian children suffer from short-term, acute food deficits, as reflected in low weight, as well as from longer-term, chronic under-nutrition, as manifested in stunting.) While the second and third rounds of the NFHS suggest that stunting rates have fallen appreciably (by about 10 percentage points) over the 13-year period between 1992–93 and 2005–06, underweight rates have not declined significantly (Figure 9.8). Even in 2005–06 — after nearly 14 years of post-reform growth and prosperity in the country — anywhere from 38 per cent to 46 per cent of Indian children are malnourished.

Figure 9.8: % of Children under 3 yrs who are Underweight or Stunted, India 1992–93 to 2005–06



Source: Author's calculations from Rounds 1, 2 and 3 of the National Family Health Survey.

Interestingly, in the Indian context, child malnutrition is not merely a function of poverty. Even in the urban areas, which are significantly more prosperous than the rural areas, a third of all children under 3 are underweight (Figure 9.9). While there is a strong

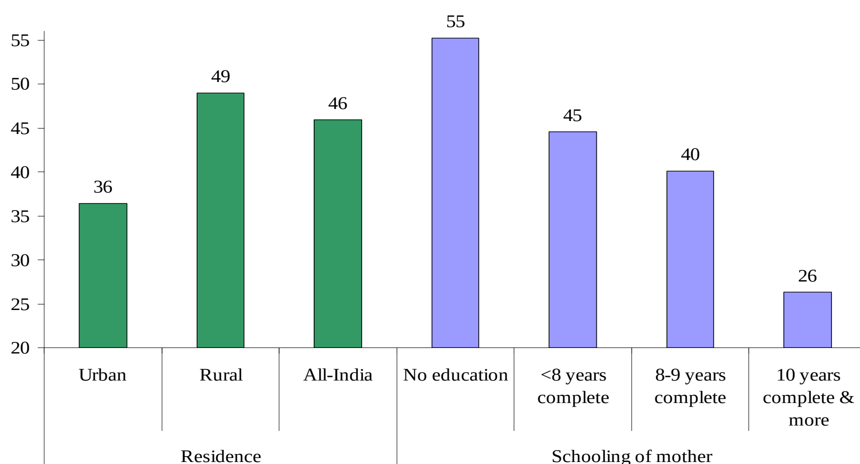
[2] For instance, based on worldwide evidence, Pelletier and Frongillo (2003) estimate that a 5 percentage point reduction in the prevalence of low weight-for-age could reduce child mortality by about 30 per cent and under-5 mortality by 13 per cent.

[3] The World Bank (1998) suggests that the cost of undernutrition in India is at least US$10 billion annually in terms of lost productivity, morbidity and mortality.

[4] As in the literature, a child is considered underweight when his or her weight-for-age is more than two standard deviations below the NCHS reference weight. A child is stunted when his or her height-for-age is more than two standard deviations below the NCHS reference. Severe underweight and stunting occur when the relevant nutrition indicator is more than three standard deviations below the NCHS reference.

inverse relationship between child malnutrition and mother's schooling, even children of relatively-educated mothers are at significant risk of malnutrition. More than a quarter of the children of mothers with 10 or more years of schooling are underweight (the rate is 55 per cent among children of mothers with no schooling). Since better-educated children are very unlikely to face constraints on food intake, these findings suggest that child malnutrition in India (as in other developing countries) has a strong cultural dimension. It is related not merely to poverty but to dietary habits and feeding customs.

Figure 9.9: % of Children under 3 yrs who are Underweight, by Residence and Mother's Schooling, India, 2005–06



Source: Round 3 of the National Family Health Survey.

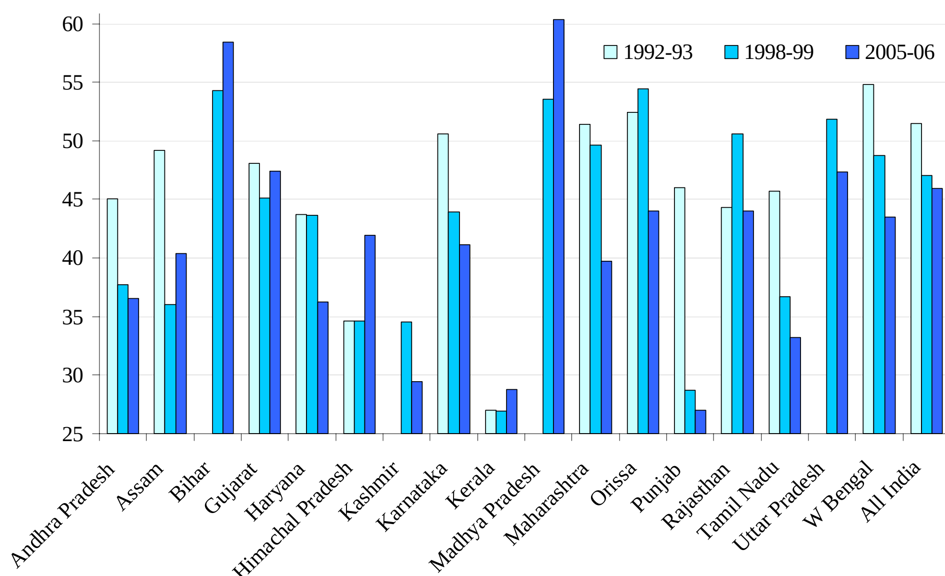
India's performance in bringing down its child malnutrition rate pales in comparison to other low-income countries, such as Vietnam. Vietnam brought down its child underweight rate from 52 per cent in 1985 to 25 per cent in 2005 (UNICEF 2006) — an annual rate of decline of about 3.7 per cent. In contrast, India's underweight rate has declined at a rate of only 0.9 per cent per annum over the period 1992–93 to 2005–06.

There are wide inter-state variations in both the level of child malnutrition and its rate of decline over time (Figure 9.10). While states such as Bihar and Madhya Pradesh have child underweight rates as high as 60 per cent, the corresponding rates are about 27–29 per cent in Kerala and Punjab. It should be noted that even the relatively low rates of child malnutrition in Kerala and Punjab are very high by international standards. Most countries having an infant mortality of 14 deaths per 1,000 live births (Kerala's rate) have child underweight rates of only 5–10 per cent — not 29 per cent, as does Kerala. There is thus a big disconnect between Kerala's performance on child health and its performance on child malnutrition. This incongruence is difficult to understand as most factors that are associated with low rates of infant and child mortality (for example, delivery and utilisation of high-quality health services, high female literacy, and good hygiene and health practices) typically also influence child malnutrition rates.

Even worse, Figure 9.10 suggests that there has been little progress in reducing child malnutrition in a number of states. The large and poor states of Bihar, Madhya Pradesh,

and Rajasthan have actually seen an increase in child underweight rates. Even in a relatively prosperous state like Gujarat, child malnutrition rates have been stagnant over the past decade. However, states such as Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and West Bengal have shown respectable (although not big) declines in child malnutrition.

Figure 9.10: Children under 3 yrs who are Underweight, by State, 1992–93 to 2005–06



Source: Author's calculations from Rounds 1, 2 and 3 of the National Family Health Survey.

There are many reasons for the high levels of child malnutrition in India. Some of these have to do with feeding practices, which are critical during the first few days and months of an infant's life. Data from the NFHS-3 indicate that fewer than one-quarter of Indian babies are breastfed within an hour of being born. In the poor states of Bihar and Uttar Pradesh, this ratio is even lower (only 4–7 per cent). This is how the cycle of child malnutrition begins very early in an Indian child's life. The delay in breastfeeding is often related to an incorrect perception that the first breast milk (*colostrum*) is an inferior food, when in fact *colostrum* is rich in antibodies and highly beneficial to the new-born infant.

Another common feeding practice in India that has adverse implications for child nutrition is the early termination of exclusive breast-feeding and introduction of supplementary feeding. One reason why mothers give up exclusive breastfeeding early is their perception that they are producing insufficient quantities of milk due to their poor nutrition and heavy workload. Premature introduction of foods other than breast milk greatly increases the risk of infection in the small infant, and this sets in motion the process of malnutrition. It also puts the infant at greater risk of malnutrition, since weaning diets are often inadequate in India. The NFHS-3 data indicate that fewer than one-half of children aged 0–5 months nationally (and only about one-quarter in Bihar) are exclusively breastfed (that is, supplementary feeding is introduced), which is not in

line with the recommendations of WHO and UNICEF that exclusive breastfeeding continue for the first six months of a child's life.

Finally, illnesses and infections, especially diarrheal infections, are also strongly associated with child malnutrition. Infections reduce the ability of the body to absorb critical nutrients from food, which in turn leads to malnutrition. The NFHS-2 data indicate that an average infant begins suffering from diarrheal diseases very early in his or her life; by the age of 6 months, he or she has already experienced an average of 2.2 diarrheal episodes, and by the age of 12 months, 5.2 illness episodes. Diarrhea is even more prevalent among infants in the poor states of Bihar, Madhya Pradesh, Uttar Pradesh, Orissa and Rajasthan.

The Indian government has had a very large national program of supplemental child feeding for more than a decade — Integrated Child Development Services or ICDS. In addition, a number of states have school feeding programs under the scheme known as the National Mid-Day Meal program. However, there is evidence that these programs have poor coverage, targeting, and implementation. For example, the ICDS mostly focuses on children aged 3–6 years, but the consensus among nutritionists is that it is critical for direct nutritional interventions to reach 6–24 month olds and pregnant women to prevent malnutrition (World Bank 1998, 2001). Further, the ICDS *anganwadi* center health worker — one per center — is typically over-burdened, as she has to manage pre-school education, supplementary feeding, and outreach activities. Another problem with the ICDS program is the frequent disruptions in food supplies that take place at the *anganwadi* center. The responsibility for the food component of the program lies with the state governments, many of which typically under-finance this component of the program owing to cost and logistical difficulties. One evaluation of the ICDS found that disruptions in food distribution were very common at most *anganwadi* centers, with the average center going without any food rations for 64 days per year (out of an intended 300 feeding days) (National Institute of Public Cooperation and Child Development 1992).

The challenge for India will be to reduce child malnutrition through a coordinated program of early childhood supplementary feeding, maternal education on proper infant and child feeding habits, and reduction of childhood infectious diseases (particularly water- and food-borne diseases). In this sense, there is a strong synergy between policies to combat high infant and child mortality and those to reduce child malnutrition. There is therefore an important need to coordinate the two set of interventions.

9.4 Nutrient Intakes

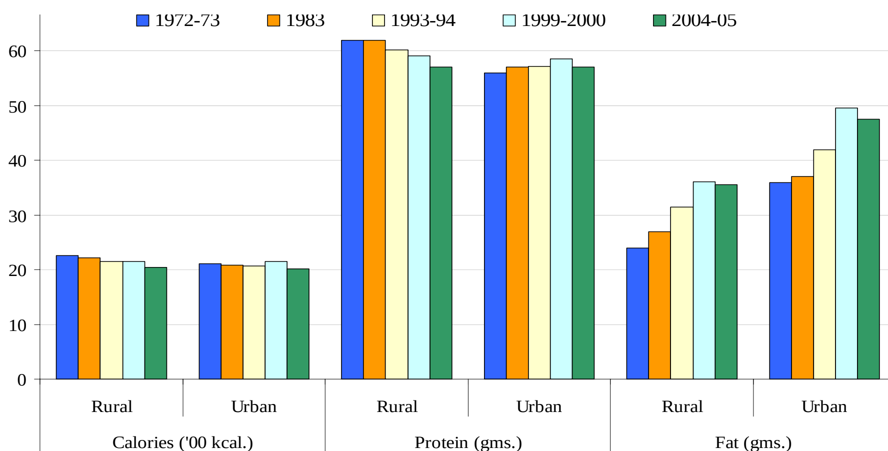
In a food-scare environment such as India's, an important indicator of well-being is the amount of food intake by an individual. Indeed, income poverty rates are designed to identify those persons who cannot meet their calorie needs based on their income.

Since the National Sample Surveys (NSS) obtain detailed information on household food consumption, it is possible to analyse trends in nutrient intake over time using the various rounds of the NSS. Figure 9.11 shows remarkable stability in average daily calorie and protein intakes per capita over the three decades between 1972–73 and 2004–05 in both the rural and urban areas of the country. At first glance, this might suggest that food intake — and food-poverty — has been stagnant. This would be a remarkable conclusion given that the Indian economy has grown tremendously — and household incomes have increased a great deal — over this period.

However, the trend in fat intake is very revealing. During the 32-year period, average fat consumption per person per day has increased by 32 per cent in the urban areas and

by 48 per cent in the urban areas (Figure 9.11). Thus, the data suggest that both rural and urban Indians have responded to higher incomes by changing their diet in favor of foods that have a higher fat (but not calorie or protein) content. The unresponsiveness of protein consumption to income growth is surprising but probably reflects the vegetarian nature of the Indian diet. With a vegetarian diet, the major scope for improving dietary quality may be via an increase in fat intake.

Figure 9.11: Calorie, Protein and Fat Intake per person per day by Residence, 1972–73 to 2004–05



Source: NSSO, Nutritional Intake in India, Report Numbers 405, 471, and 513.

There are wide variations in the dietary changes that have occurred across states. Punjab and Haryana have seen large declines in mean calorie and protein intake over the 1972–2004 period, but once again this reflects a shift in the composition of the diet rather than a decrease in food consumption per se (Figures 9.12 and 9.13). Both of these states have some of the highest levels of fat intake in the country, and mean fat intakes have increased — albeit by not very much — in these two states. The real surprise is the experience of Orissa, West Bengal and Kerala, all of which have seen mean fat intakes more than double over the 32-year period. The data thus suggest that in all the states — even the poorest ones like Bihar and Orissa — the average quality of the diet has improved significantly even though mean calorie intake has not.

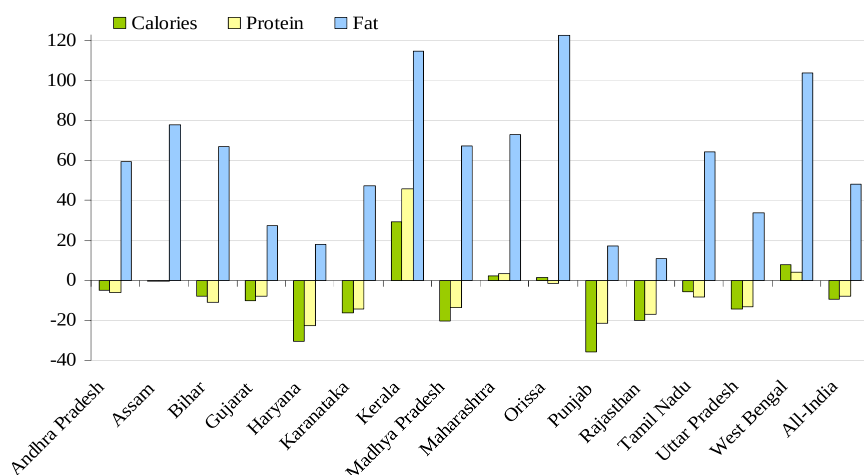
Of course, the analysis undertaken above relates to *mean* levels of nutrient intake. It would be instructive to examine the changes that have occurred in the diets of different economic groups to see if the fat intakes of the poor have also increased at the same rate as that of the overall population.

9.5 Educational Attainment

Another important indicator of human development is education. One of the millennium development goals is to ensure that, by 2015, all children complete at least the primary cycle of schooling (typically five years). The abundant social and benefits of benefits of schooling are well-documented in the literature on economic development. Schooling is

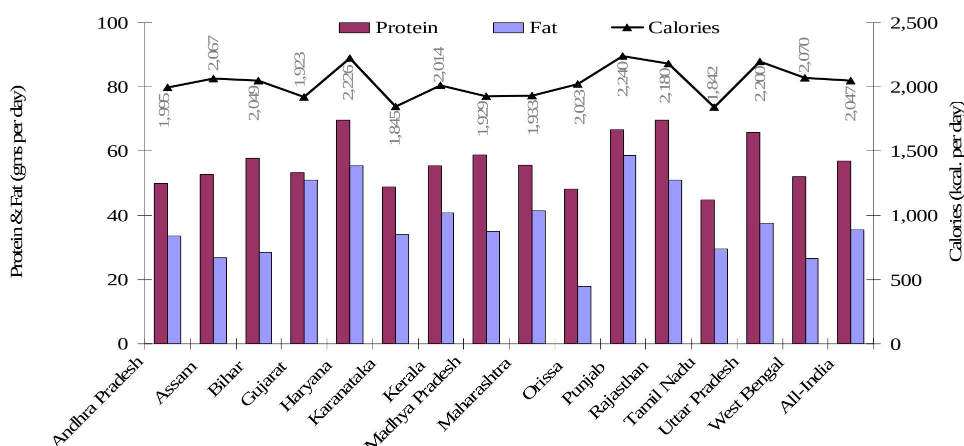
recognised as one of the most powerful instruments for reducing poverty, unemployment, and inequality; improving health and nutrition; increasing accountability and transparency among governments; and promoting broad-based economic growth. It is also self-perpetuating across generations, with better-educated parents much more likely than less-educated parents to provide schooling to their children.[5]

Figure 9.12: Changes in Nutrient Consumption per capita per day, Rural Areas, 1972–73 to 2004–05



Source: NSSO, Nutritional Intake in India, Report Numbers 405, 471, and 513.

Figure 9.13: Calorie, Protein and Fat Intake per person per day, by State, 2004–05 (rural areas)



Source: NSSO, Nutritional Intake in India, Report Numbers 405, 471, and 513.

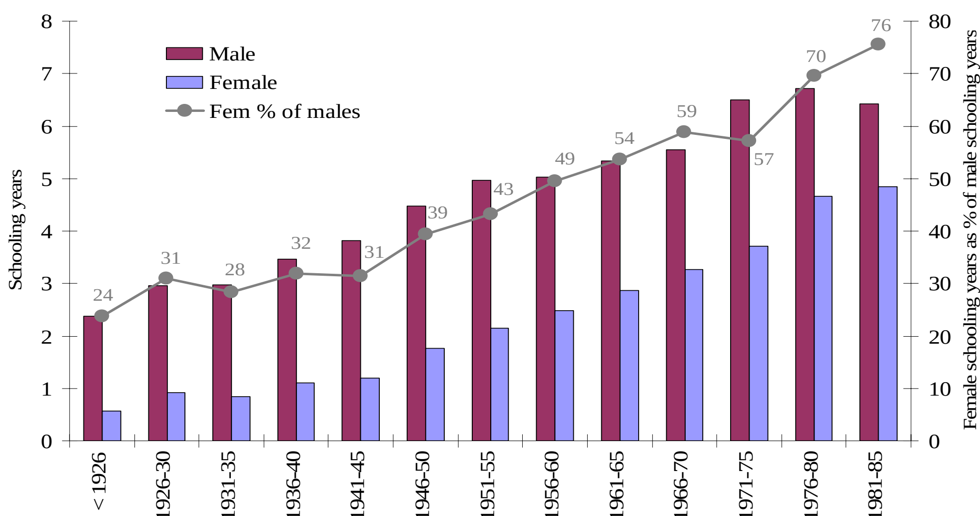
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[5] Note that 'primary' schooling refers to grades 1-5 in this chapter. The term 'lower primary' is sometimes used in India to denote grades 1-5, while 'upper primary' refers to grades 6-8. 'Elementary' education refers to grades 1-8.

India has made rapid strides in schooling since Independence. The various Censuses show the literacy rate increasing from merely 18 per cent in 1951 to 35 per cent by 1971, 52 per cent by 1991, and 65 per cent by 2001. Since the literacy rates refer to persons seven years of age and older,[6] the increase in literacy reflects rapid expansion of schooling in the country. Despite this progress, large pockets of illiteracy remain in the country. Even in 2001, the literacy rate among rural females was merely 47 per cent — compared to 87 per cent among urban males. In Bihar, female literacy in 2001 was merely 34 per cent.

It is possible to get an idea of how educational attainment has increased over a much longer period by examining the completed schooling of different age cohorts from a single cross-sectional survey. We use data from the recently-released 61st round of the National Sample Survey (NSS) to construct average years of schooling for different age cohorts of adults.[7] Figure 9.14 shows that educational attainment increased rapidly over the course of the 20th century. Mean schooling years increased nearly three-fold among males born in 1981–85 as compared to males born before 1926. Among women, the rise in schooling attainment was even more spectacular. Females born in 1981–85 experienced an eight-fold increase in schooling attainment compared to females born before 1926. As a result, the ratio of female to male schooling attainment increased from about one-quarter in the oldest cohort in the sample to three-quarters in the youngest cohort.

Figure 9.14: Average Years, by Sex and Ratio, of Female to Male Schooling, by year of Birth



6 Actually, literacy as defined in the 1951, 1961 and 1971 Censuses relates to the population aged five years and older. Since the 1981 Census, literacy is reported for persons aged seven years and older.

7 The NSS reports levels of schooling — primary, junior secondary, senior secondary, college, etc. — completed. We assign years of schooling to each of these categories in order to convert the levels of schooling completed to years of schooling. This procedure does naturally introduce some imprecision in the schooling years estimates. Also note that the data are reported only for adults aged 21 years and over in 2004-05 that reported not attending an educational institution at the time of the survey.

The same data disaggregated by state reveals some interesting patterns.[8] Himachal Pradesh saw a spectacular increase in schooling attainment during the 1900s, with mean schooling years increasing from one in the oldest cohort (those born prior to 1926) to 8 in the youngest cohort (those born in 1976–85) (Figure 9.15). In comparison, Bihar's growth was anemic, with mean schooling years increasing from 3.7 years in the oldest cohort to 5.5 in the youngest cohort.

Figure 9.15: Average Years of Schooling by Sex, Year of Birth and State

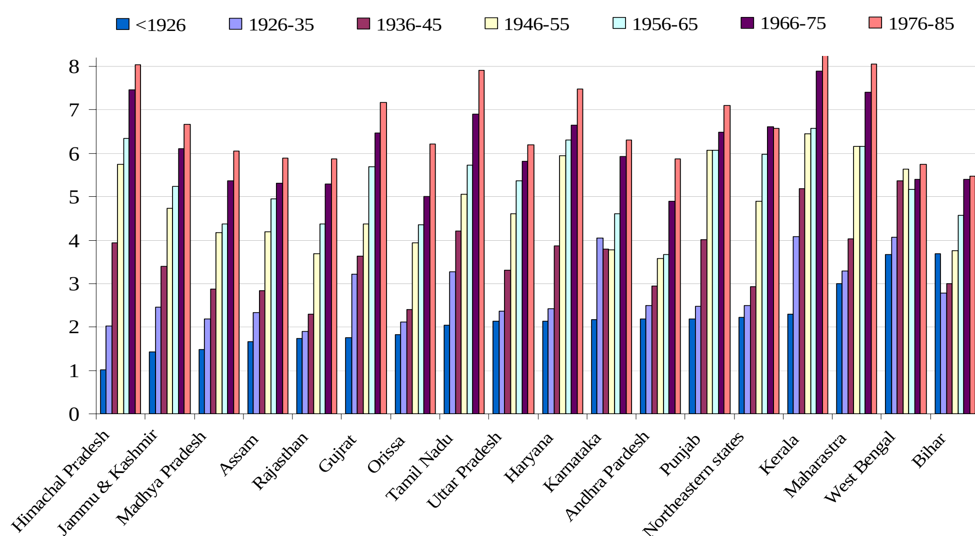


Figure 9.16, which displays the same data as Figure 9.15 in slightly different form, shows that, in most states, schooling expanded more rapidly in the first period (earlier part of the 20th century) than in the second period (latter part of the century). Only in Andhra Pradesh, Bihar and Karnataka did schooling attainment expand more rapidly in the second period than in the first period. In Gujarat, Orissa, Rajasthan and Tamil Nadu, growth during both periods was approximately similar.

The cohort analysis does not inform us about the expansion of education in the most recent past. For this, we need to analyse school enrollment data. While it is possible to obtain school enrollment rates going back to the 1950s, these tend to be unreliable, as they are obtained from school administrative data, and these data typically overstate the number of enrolled students. Data from household survey data typically show much smaller enrollment rates. Below we use data from two rounds of the NSS household data — the 50th round conducted in 1992–93 and the 61st round conducted in 2004–05 — to analyse trends in schooling attendance over time.

Figure 9.17 shows the age-specific school attendance rate — viz., the proportion of children aged 5–24 years who attended an educational institution — in 1992–93 and 2004–05. It is obvious that there was a major expansion of school attendance during this 12-year period. Among the age group 5–12 years — the primary school-going age — attendance rates of boys increased by 10–15 percentage points while those of girls rose

[8] Because of a limited number of observations in the sample, the cohorts are redefined in 10-year — not 5-year — age groups in the state-level analysis.

by 15–20 percentage points. For instance, only 79 per cent of 8-year old boys were attending school in 1992–93; by 2004–05, this ratio went up to 90 per cent. The shift among girls was even more dramatic; school attendance rate among 8-year old girls increased from 68 per cent in 1992–93 to 87 per cent in 2004–05.

Figure 9.16: % Growth in Mean Schooling Yrs over 2 Periods in the 20th Century, by State

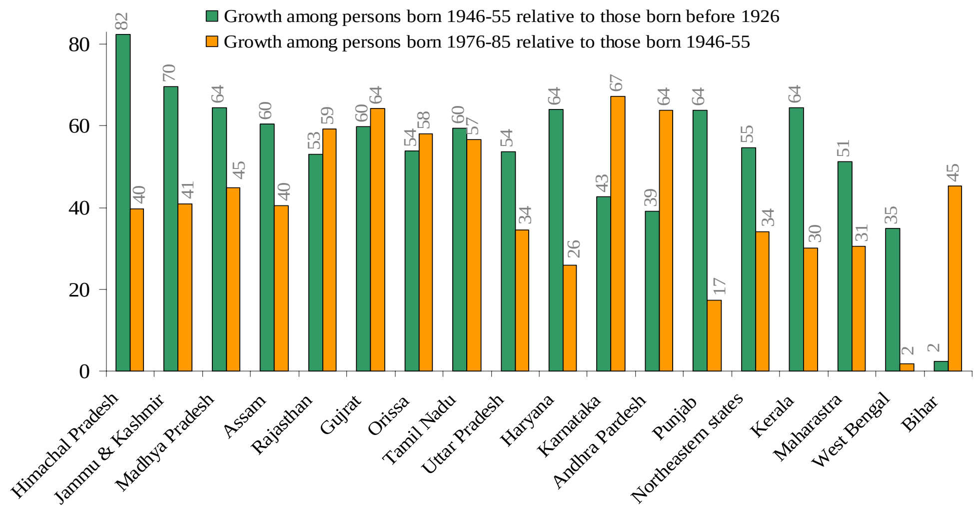
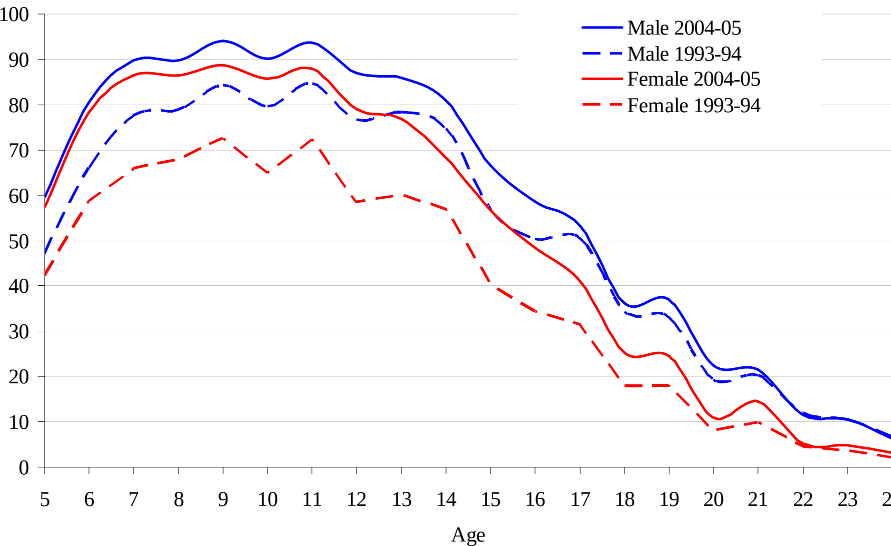
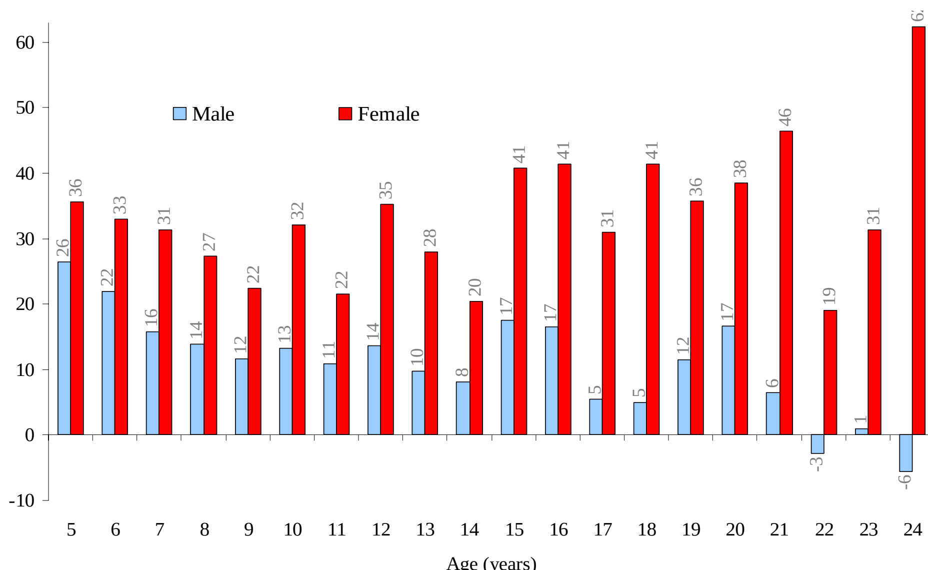


Figure 9.17: School Attendance Rates (%), by Age and Sex, 1993–94 and 2004–05



What is impressive is that the school attendance rate has increased significantly more for girls than for boys at every single age (Figure 9.18). In fact, at older ages (17–24 years, corresponding to tertiary education), the increase in school attendance among males has been very modest or even negative. In contrast, females of these ages have seen double-digit growth rates in attendance. Of course, in absolute terms, school attendance rates at these ages are still relatively small.

Figure 9.18: % Increase in School Attendance Rate between 1992–93 and 2004–05, by sex



The sharp growth in female school attendance at the secondary and tertiary levels is probably the result of two factors: (i) rapid economic growth during the 1990s that has brought about an expansion of female employment opportunities, especially in the urban areas of the country, and consequently increased the demand for post-primary education among girls; and (ii) the introduction of fee waivers and scholarships for girls at the secondary and tertiary levels, which has reduced the direct costs of completing post-primary education for girls. A number of states provide tuition fee waivers for girls attending Class VI to Class XII. There are also a number of similar UGC schemes at the graduate and post-graduate levels for female students.

As would be expected, schooling expansion during the 1990s varied significantly across the states. In general, the states with the lowest school attendance rates in 1992–93, such as Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, Orissa, Andhra Pradesh and West Bengal, recorded some of the largest improvements in school attendance among 6–11 year olds between 1992–93 and 2004–05 (Figures 9.19 and 9.20). For instance, Andhra Pradesh saw school attendance among 6–11 year old boys go up from 79 per cent to 96 per cent during this period (Figure 9.19). In Rajasthan, the school attendance rate among 6–11 year old girls rose from 44 per cent to 79 per cent (Figure 9.20). These represent huge declines in the number of out-of-school children.

Figure 9.19: School Attendance Rates among Males aged 6–11 yrs, by State, 1993–94 and 2004–05

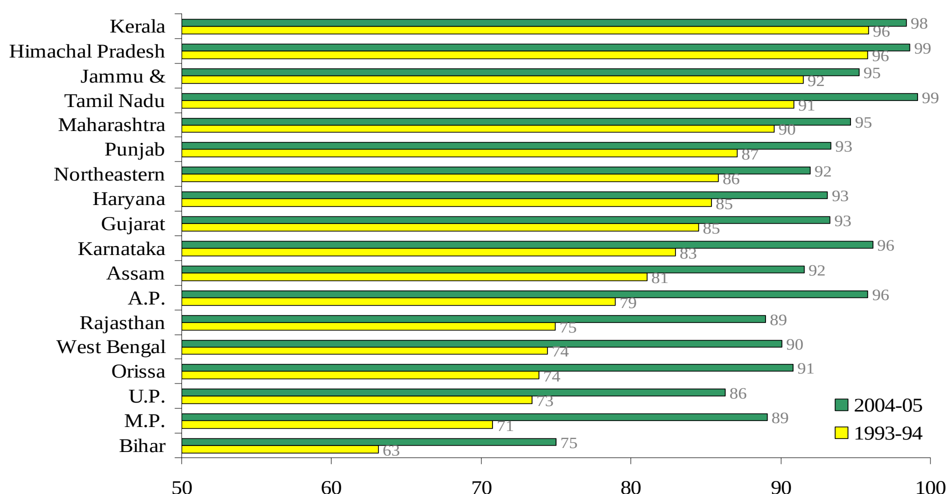
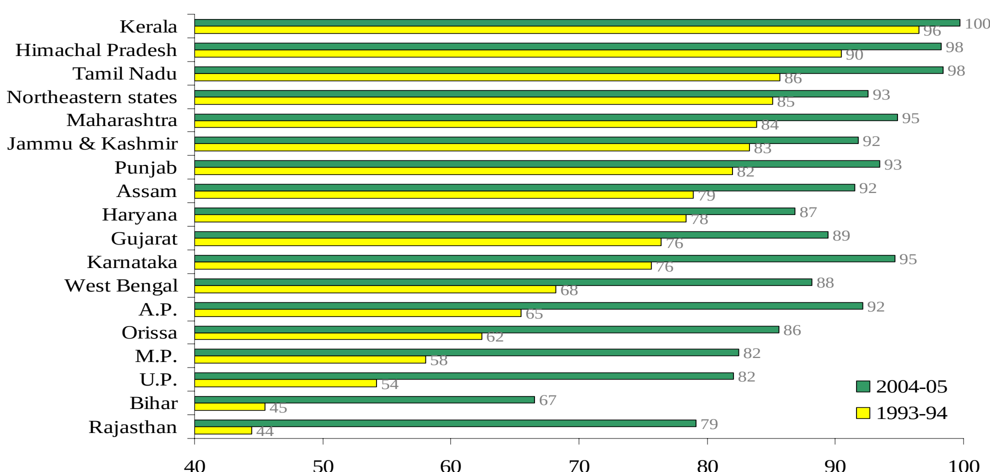
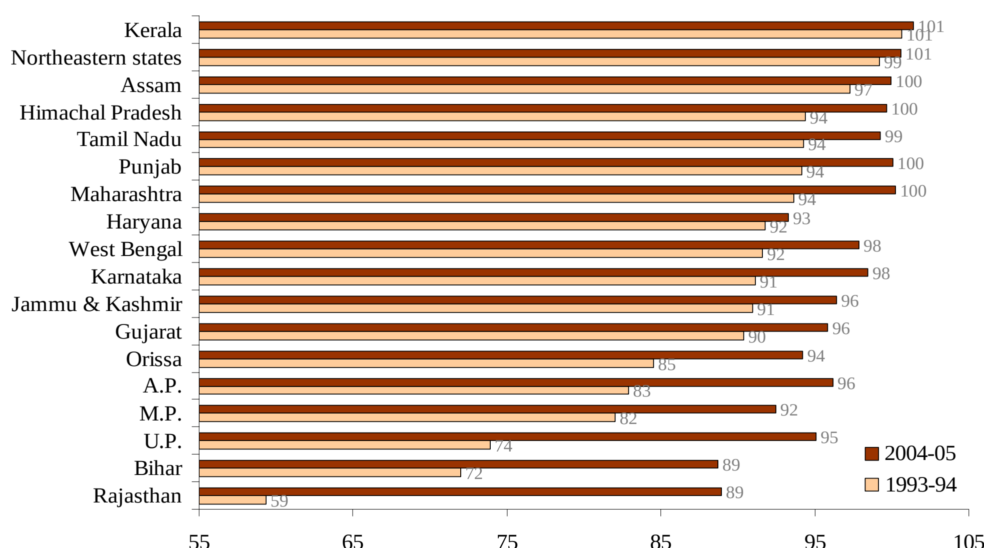


Figure 9.20: School Attendance Rates among Females aged 6–11 yrs, by State, 1993–94 and 2004–05



Indeed, as Figure 9.21 shows, in all the states, female attendance rates increased much more rapidly than male attendance rates during the 1992–2005 period, so that girls caught up significantly with boys. In 1992–93 in Rajasthan, for instance, the school attendance rate for girls aged 6–11 was only 59 per cent of the corresponding rate for boys; by 2004–05, it was up to 89 per cent. In Bihar, as well, the female-male school attendance ratio at the primary level rose from 72 per cent to 89 per cent. Thus, there was a major improvement in gender equity in primary schooling between 1992–93 and 2004–05.

Figure 9.21: School Attendance Rates among Females as % of those among Males aged 6–11, by State, 1993–94 and 2004–05



As Figures 9.22 and 9.23 indicate, there was a similar reduction in gender disparity in schooling among 12–15 and 16–17 year olds, especially in the low-income states of Bihar, Uttar Pradesh, Rajasthan, and Madhya Pradesh.

Figure 9.22: School Attendance Rates among Females as % of those among Males aged 12–15, by State, 1993–94 and 2004–05

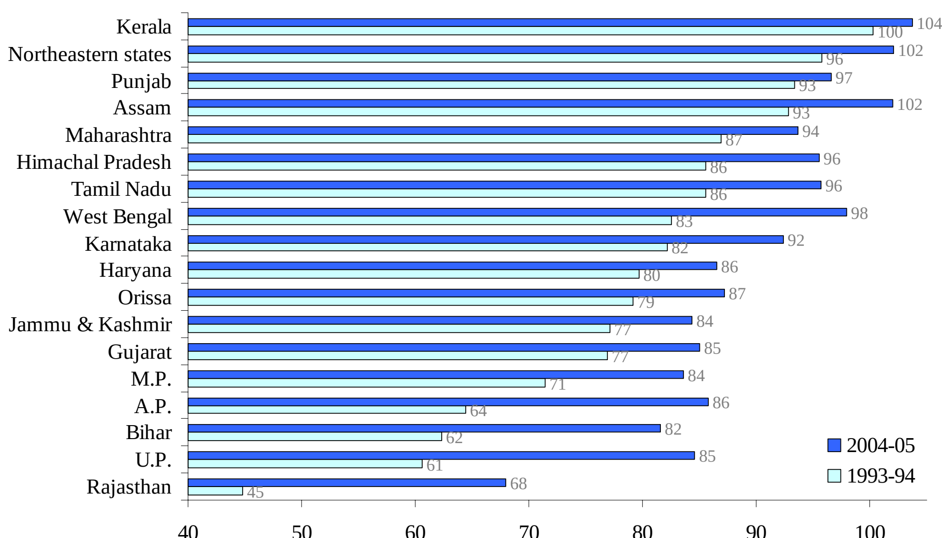
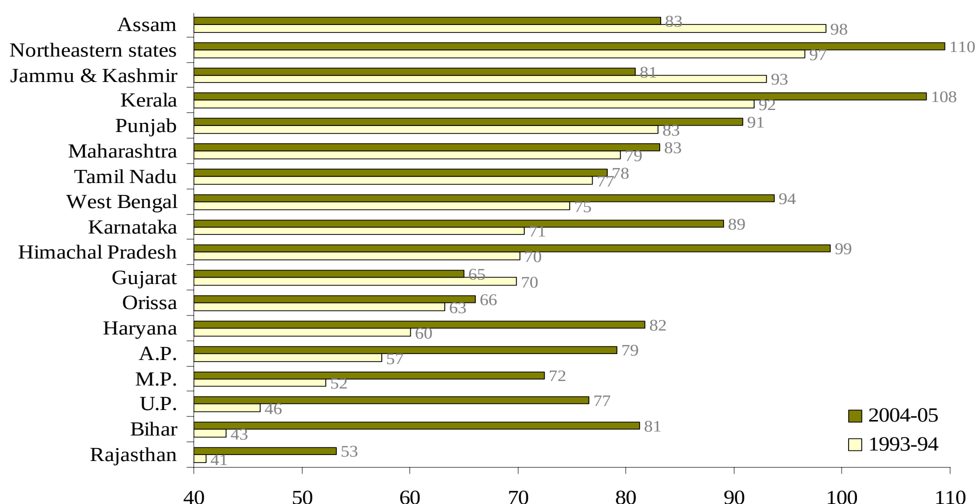


Figure 9.23: School Attendance Rates among Females as % of those among Males aged 16–17, by State, 1993–94 and 2004–05



The large gains in schooling, especially during the last decade, are likely the result of a major program launched in 2001 by the Indian government in partnership with the states — the *Sarva Shiksha Abhiyan* (meaning Education for All). The program aims to universalise elementary education — primary schooling by 2007 and upper primary by 2010. In addition, the program seeks to close gender and social group disparities in school enrollment.

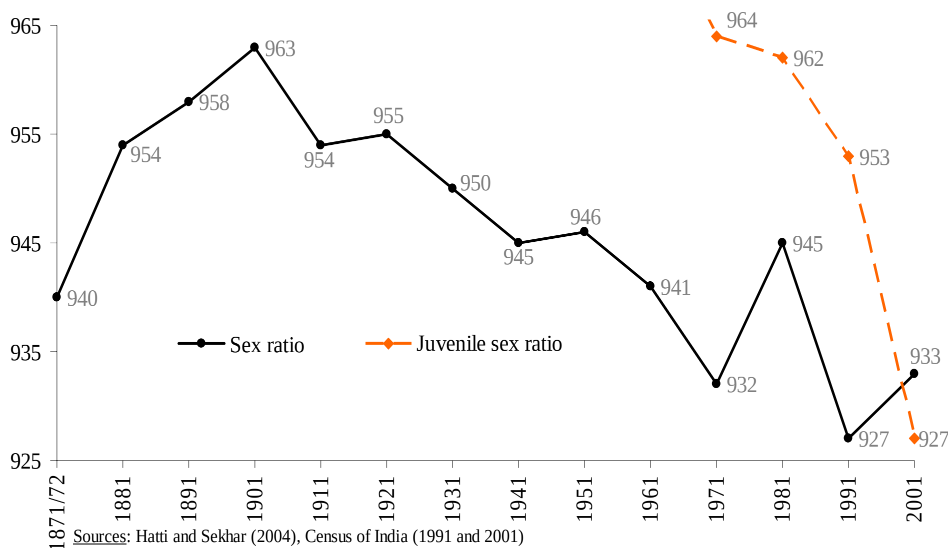
Already, the program has seen the establishment of more than a quarter million new schools and a decline in the number of out-of-school children from 32,000,000 in 2001–02 to only 7,000,000 by April 2006. Under the SSA, the government has dramatically increased public expenditure on elementary education. In its initial phase, public spending on elementary education was increased by an additional 0.2 per cent of GDP each year. Extending universalisation to upper primary levels, which is yet to be achieved, will cost more. A substantial portion of incremental spending on the SSA has been budgeted through a so-called $3.5 billion sector-wide approach (SWAP) operation involving external partners (IDA, DfID and the EU), state governments, and the central government, with the latter contributing 45 per cent, state governments contributing 25 per cent, and external partners the remaining 30 per cent. Interestingly, in the push for universalisation, the central government's financial share, relative to the states, has far exceeded its overall share in education finance.

The major challenges that remain are achieving universal lower primary schooling in the poorest states, such as Bihar; extending universalisation to the upper primary level; and focusing on quality improvements. There is anecdotal evidence that in the rush to achieve universal primary schooling, quality considerations may have been set aside. The education sector is afflicted by many of the same problems that ail the health sector — viz., poor accountability of teachers to students, parents and local communities, resulting in high rates of teacher absenteeism. Effective decentralisation of educational services to local communities, so that these communities have a real say in the recruitment and dismissal of teachers, would improve teacher incentives and accountability.

9.6 Sex Ratios

Another indicator of human development — very relevant for India — is the juvenile sex ratio (that is, the number of girls aged 0–6 years for every 1,000 boys of the same age). India is one of the few countries in the world to have a skewed juvenile sex ratio (less than 1,000), reflecting the fact that there are significantly fewer female than male children in the country. Even more bleak is the fact that the *aggregate* sex ratio in the country has been declining for much of the 20th century. After a period of increase from 1871–72 to 1901, it has been secularly declining (except for a brief reversal in 1981) (Figure 9.24). The *juvenile* sex ratio in the country has declined even more sharply than the overall sex ratio — from 976 in 1961 to 927 in 2001 (Figure 9.24). The low and falling juvenile sex ratio reflects two factors at work in the country: sex-selective foeticide and excess female infant mortality (relative to male infant mortality). Both in turn reflect parental discrimination against girls.

Figure 9.24: Aggregate and Juvenile Sex Ratio in India, 1871–2001



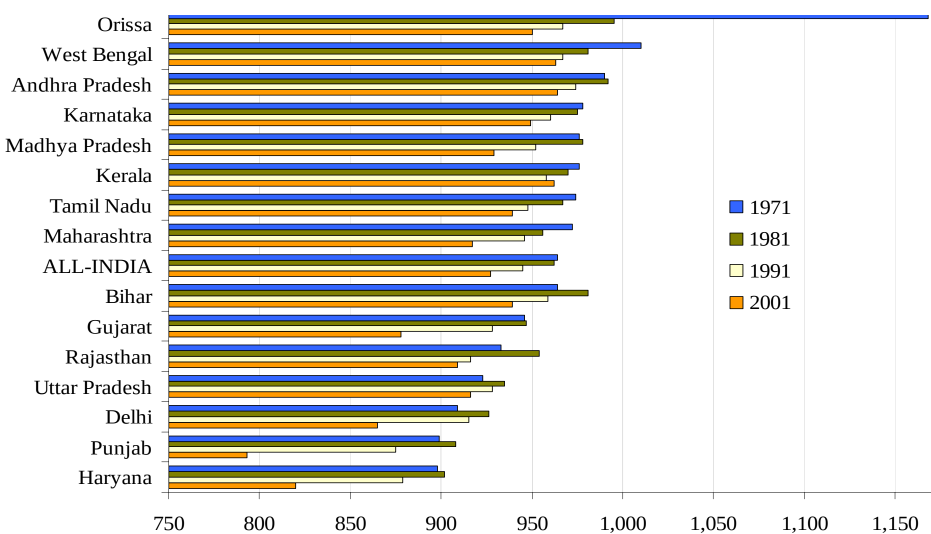
Sources: Hatti and Sekhar (2004), Census of India (1991 and 2001)
Note: The Census of 1871/72 was confined to the Old British Provinces and the former Princely State of Mysore.
The figures for 1881-2001 pertain to the territory as existing at the 2001 Census.

Interestingly, the national findings hold true for every single state in the country. Not a single state — not even the progressive state of Kerala that has high levels of female literacy — enjoys a juvenile sex ratio of 1,000 or more (Figure 9.25). Further, every single state other than Kerala experienced a decline in the juvenile sex ratio between 1991 and 2001. Even in Kerala, the juvenile sex ratio barely budged during the decade of the 1990s.

The Indian government has outlawed prenatal sex-determination tests and sex-selective abortions, but this has done little to stop such abortions from taking place. Enforcement of these laws is weak and there are many loopholes in the law that allow clinics and doctors to continue to perform sex-determination tests. The root of the problem is that, in

Indian culture and society, women have much lower value and status than men. While there are several reasons for this, one is that, historically, inheritance laws in the country, especially among Hindus, have favored sons over daughters. Hindu inheritance customs were codified into law in a bill enacted in 1956 that provided the right of inheriting ancestral property to only males. It is widely believed that some of the worst manifestations of gender discrimination in India, such as female foeticide and dowry, can be traced to biased inheritance laws favoring sons.

Figure 9.25: Juvenile (0–6 yrs) Sex Ratio, by State, 1971–2001



Source: Census of India, 1971, 1981, 1991, and 2001.

During the 1990s, a few stalwart states, such as Andhra Pradesh, Karnataka, Maharashtra, and Tamil Nadu, changed their laws to provide women the right to inherit ancestral property. (Kerala had already accomplished this in 1975.) In 2004, the Indian Parliament introduced and passed the Hindu Succession (Amendment) Bill, which removed the discriminatory provisions of the 1956 Act and allowed parents to bequeath their property to their daughters.

9.7 Concluding Remarks

India's record at human development is mixed. On the one hand, the country has made significant progress, especially during the 1990s, on expanding access to primary education. For the first time since its independence, India is close to achieving universal (lower) primary schooling. However, progress has not been as rapid as is needed in a number of other human development areas, especially health. Certainly, progress has been slower than in other countries in Asia, most particularly India's neighbor, Bangladesh. A recent article by Dreze (2004) suggests that, despite being poorer than India and having a slower-growing economy than India's, Bangladesh is now ahead of

India on most social indicators. Bangladesh has lower infant and maternal mortality rates, higher child immunisation rates, better access to 'improved' water sources and sanitation, and higher primary enrollment rates than India. In addition, Bangladesh has completely eliminated the gender gap not only in primary education but also in secondary education, while India still has a significant gender gap at both levels. Dreze admits that 'Bangladesh is no paradise of human development, … but social indicators are improving quite rapidly not just for a privileged elite but also for the population at large.' On the other hand, Dreze contends that '… in India, social progress is slower and less broad-based, despite much faster economic growth. This is one indication, among many others, that India's development strategy is fundamentally distorted and lop-sided.'

The very fact that infant mortality and child malnutrition have not fallen as rapidly in India as in Bangladesh — even though the Indian economy has grown much more rapidly than that of Bangladesh — suggests that economic growth, in and of itself, is unlikely to make a big dent in the problem of child mortality and malnutrition. And, of course, the fact that the juvenile sex ratio has actually fallen as economic growth has accelerated suggests that the problem of sex-selective abortions and female child neglect is unlikely to go away with increased growth and prosperity.

With the rapid growth of the Indian economy and the consequent increase in absolute tax revenues, scarce resources should no longer be a constraint to initiating — or an excuse for not initiating — big and bold interventions that finally allow the country to make major improvements in child health and nutrition. The recent National Rural Health Mission is an important step in this direction, but it remains to be seen whether this initiative will truly make a difference or whether it will end up like all the other health initiatives before it. Of course, lack of resources is not the only reason for India's poor record at human development; problems of governance, accountability, weak political will, and poor incentive structures, among others, have plagued the social sectors and compounded the problem of scarce resources.

Finally, it is important to note that the different dimensions of human development analysed in this chapter — infant mortality, child malnutrition, schooling and sex ratios — are strongly inter-related. Indeed, there is a great deal of evidence from around the world indicating significant synergies among these indicators of human development. For instance, improved nutrition during infancy reduces the risk of mortality in infancy and childhood. Although maternal mortality is an indicator that has not been analysed in this paper, interventions that reduce maternal mortality, such as tetanus immunisation, expansion of antenatal care coverage, and an increase in the ratio of professionally-attended deliveries, also bring about large reductions in infant (especially neonatal) mortality. Likewise, reducing child malnutrition is likely to result in both schooling quantity and quality, as better nourished children are more likely to attend school and perform better in school. Improved female schooling is likely to reduce sex-selective abortions and improve the juvenile sex ratio (but only after the educated girls reach reproductive age). The existence of strong synergies among the different components of human development means that integrated and simultaneous action on all the dimensions of human development — infant mortality, child malnutrition, schooling, and sex ratios — will be very cost-effective.

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10

Microfinance, Self-Help Groups and Empowerment in Maharashtra*

Raghav Gaiha & Mani Arul Nandhi

The 1990s were marked by partial deregulation of interest rates, greater competition in the banking sector, and a new nationwide microfinance initiative linking banks, NGOs and informal local groups (self-help groups or SHGs).[1] Better known as 'SHG Bank Linkage', it is expected to become a dominant form of financial access for the rural poor. However, informal/local moneylenders continue to have a strong presence in rural India, delivering finance to the poor, as a vast majority of them still lack access to formal sources of finance (Basu and Srivastava, 2005, Dasgupta, 2005, and Ghate, 2007). A major challenge therefore is to widen access to finance of the rural poor-especially women as a highly disadvantaged and deprived group- to meet their diverse needs (for example, savings, credit, insurance against unexpected events) through flexible products at competitive prices.[2]

The present study assesses the benefits of microfinance through self-help groups, based on a specially designed survey in selected villages in Pune district. While the benefits in terms of higher income, consumption, and savings matter for the poor, the focus here is broader. Following Narayan (2005), empowerment is defined as 'increasing poor people's freedom of choice and action to shape their own lives' (p.4). The focus therefore is on the *opportunity structure* and *agency* of the poor. In the present context, some key questions are: (i) whether access to microfinance — particularly microcredit — has given women greater autonomy in household decisions relating to allocation of resources, savings and investment; (ii) whether it has helped broaden their role in the public sphere-participation in village Panchayats, campaigns for village hygiene and sanitation, strengthened bonding among members of diverse social and economic backgrounds; (iii) whether density of social networks has been an important factor in the success of SHGs; and, finally, (iv) how sustainable is this form of access to finance.

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* This study was conducted under the overall guidance and support of T. Elhaut and G. Thapa. The field-work in Pune was conducted by P. Sadolikar and his team of investigators under the authors' supervision. An earlier version was discussed at a conference organised by Australia South Asia Research Centre, Australian National University, Canberra, in August, 2007. The present version has benefited from the comments of several participants. Data processing and analysis were done by R. Bhatia. We are grateful to Sundeep Vaid and Monica Bugghi for valuable research support. The authors are, however, responsible for the views expressed here.

[1] Microfinance includes a bundle of financial services of small value such as savings, credit, and insurance, designed to serve the needs of the poor. Microcredit differs from other forms of credit where not only the credit amount is small and the clientele poor but also credit is provided with 'collateral substitute' and non-financial services for increasing the productivity of credit (Dasgupta, 2005).

[2] Two illuminating surveys are de Aghion and Morduch (2004), and Weiss (2005).

The analysis is based on a small but detailed survey of members of SHGs in six villages in Pune district, a control group, and representatives of implementing agencies (banks, NGOs, official agencies, Panchayats). Two features of the present analysis distinguish it from others. One is that it uses a combination of methods and data (that is, quantitative and qualitative); and the second is the elaboration of the forms and processes of empowerment.[3] Through several different exercises and a wide range of indicators, important findings from household responses are validated.

10.1 Overview[4]

India has a deep financial system, with the share of financial assets in GDP being 93 per cent. This is much higher than corresponding shares in other Asian countries such as China (42.5 per cent) and Korea (64.7 per cent). This is largely a result of India's vast network of financial institutions. Following the bank nationalisation in 1969, there was a rapid expansion of banking in rural India (at an annual average of 15.2 per cent), about double the rate of growth of branches in semi-urban (6.4 per cent), urban (7.8 per cent) and metropolitan areas (7.5 per cent) during 1973–1985 (Basu and Srivastava, 2005).

The share of banks in total rural household debt was barely 2.4 per cent until 1971. Following the bank nationalisation, this share rose to 29 per cent in 1981 and that of all formal or institutional sources (including cooperatives) reached 61.2 per cent in 1991. Disbursement per hectare increased from Rs 72.3 in 1980–81 to Rs 275.13 in 1999–2000 (at constant prices), a substantial increase over 19 years (Dasgupta, 2005).

As no comprehensive survey of rural access has been conducted since 1991, a World Bank-NCAER Rural Financial Access Survey (RFAS-2003) in two states, Uttar Pradesh and Andhra Pradesh, facilitates some comparisons over 1991–2003.[5]

About 41 per cent of the rural households have a deposit account and 21 per cent have access to credit from a formal source. Banks are the largest source of finance for rural households among those with access to formal sources (accounting for 51 per cent of credit from these sources). But it is largely richer households who have benefited from expansion of rural banking, as 66 per cent of large farmers have deposit accounts, and 44 per cent have access to credit. By contrast, 70 per cent of marginal/landless farmers do not have a bank account and 87 per cent do not have access to credit from a formal source (Basu and Srivastava, 2005).[6]

Access to formal sources — especially of the poor — is limited as they often need to borrow for unexpected contingencies from relatives/friends, and local moneylenders. In RFAS-20030, over 90 per cent of households financed unusual expenses from cash at home, and the second largest source was informal loans from relatives/friends and local moneylenders. New sources such as Kisan Credit cards cover a tiny fraction. Access to other financial services, such as insurance, is also limited, as 82 per cent of the rural households surveyed did not have any insurance, and none of the poorest.

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3 For two recent reviews, see Ghate (2007) and Fernandez (2007).

4 This draws upon two excellent surveys (Basu and Srivastava, 2005, and Dasgupta, 2005).

5 Two recent comments by Chavan (2005) and Subba Rao (2005), based on National Sample Survey (NSS) data, overlook the limited coverage in terms of occupational categories of NSS results.

6 Marginal farmers are defined as those with landholding < 1 acre; small with landholding between 1 to 4 acres; and large farmers with landholding >4acres.

There are marked regional differences in the distribution of financial services, with a considerably lower access in economically backward regions.[7] Of special concern is the exclusion of the rural poor from access to formal financial services. From the point of view of rural banks, catering to the rural poor is highly risky and costly. Highly irregular income streams and expenditure patterns drive up default risk. These difficulties are compounded by lack of collateral, delays in recovery of loans, and inability to make productive use of loans. On the other hand, small rural borrowers are reluctant to borrow from banks, as they cannot borrow and repay in small instalments. Besides, they incur high transaction costs, including time needed to go to a bank branch, elaborate procedures for opening an account (and the bribes involved), and long waiting periods. As a result, despite interest rate caps, the cost to borrowers is very high (Basu and Srivastava, 2005).

Unavoidably, most rural borrowers — especially marginal and small landholders — rely heavily on informal sources. Informal loans are usually of a short-term nature. Other features that make such loans attractive are easy access, flexible repayment schedules and limited reliance on collateral requirements.

10.2 Social Banking Experiment and Rural Poor

After bank nationalisation in 1969, the Indian government launched an ambitious programme to improve the access of the rural poor to formal credit and saving opportunities. A key feature of this programme was bank branch expansion into unbanked rural locations (that is, rural areas without any formal credit or saving opportunities). To further promote banking facilities in such locations, the Reserve Bank of India (hereafter RBI) announced a new branch licensing policy in 1977 which operated until 1990.[8] Under this policy, in order to obtain a license for opening a new branch in a location with one or more branches (that is, in a banked location), it was mandatory for a bank to open four branches in an unbanked location (referred to as the 1:4 licensing policy). To ensure that this expansion translated into greater credit and saving opportunities for the rural population, the RBI introduced additional policy changes. Between 1969–90, the rural lending rates were kept lower than urban rates, with the opposite being true of savings rates. Besides, lending targets for the so-called ‘priority sectors’ were imposed. The latter comprised small businesses/entrepreneurs, and agriculture.

A recent review confirms the favourable effects of this banking reform, as there was a marked shift in savings mobilisation and credit disbursement in rural India.[9] These shifts were associated with a significant reduction in rural poverty over the period 1977–90.

While this finding is plausible, one missing dimension is the cost of the social banking experiment, relative to other credit channels (for example, microcredit). So, despite the strong evidence, little can be said about the cost-effectiveness of the resources invested in this experiment. In particular, the high transaction costs for the poor-reflected in the time wasted and bribes paid-raise serious concerns.[10]

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[7] For details, see Gaiha and Nandhi (2005).

[8] Since 1990, branch expansion is governed by ‘the need, business potential, and financial viability of the location’ (GOI, 1991). Banks are, however, not permitted to close a rural branch if it is the only one serving a location.

[9] For details, see Burgess and Pande (2005).

[10] For an assessment, see Gaiha and Nandhi (2005).

10.3 Microfinance in India — Approaches and Progress

As access to formal finance - including subsidised credit through IRDP and its recent variant *Swaranjayanti Gram Swarozgar Yojana* (SGSY) — of the rural poor has been limited, two microfinance approaches have been experimented with. One is the SHG Bank Linkage and the other is the 'Grameen type'/or microfinance institution model.[11] These are designed to combine the safety and reliability of formal finance with the convenience and flexibility of informal finance. A stylised description of three approaches- including the individual banking component- is given in Table 10.1. No further comment is made on the individual banking component as it is relatively small.

The progress of microfinance so far has been modest. A notional estimate of the poor benefiting from it is 5 per cent at the all-India level, as compared with 65 per cent in Bangladesh (Basu and Srivastava, 2005).[12] Of the two approaches, the SHG Bank Linkage dominates the MFI model in scale and outreach.

SHG Bank Linkage

Launched by some NGOs in the 1980s, this approach gathered momentum in the 1990s. Legal obstacles were removed, subsidies were given so that SHGs could take loans from banks for distribution among their members and invest in micro enterprises or meet contingencies. The rate of interest is decided by SHGs in accordance with their own rules for loan distribution (usually 2–3 per cent per month). Savings of SHGs are assigned to a group deposit account in a bank, against which the SHGs borrow (at about 12 per cent cent per annum).[13] So both group savings and joint liability act as collateral. NABARD provides refinance facilities to banks for such lending. The demand for refinance has declined as banks now find it attractive to lend to SHGs, given the low default rate (less than 1 per cent) compared with 11–12 per cent on their regular portfolio.[14]

There has been rapid expansion of SHGs and credit disbursals through them. The number of new SHGs provided with bank loans (cumulative) rose from 263, 825 in 2001 to 2,238, 565 in 2006. Bank loans disbursed (cumulative) rose from Rs 481 crore to Rs 11.398. Rate of growth of repeat loans, however, slowed down from 91 per cent in 2002 to 34 per cent in 2006. Average loan size rose substantially — from Rs 19,379 in 2001 to Rs 37, 574 in 2006 (Ghate, 2007).[15]

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[11] Dasgupta (2005) distinguishes three different approaches by splitting the SHG Bank Linkage into two components- one in which SHGs are developed by banks and another in which formation of SHGs is assigned to NGOs but credit in both cases is given by the same bank.

[12] Since it is a common practice to divide the total number of microfinance beneficiaries, without distinguishing the poor from the non-poor, by the number of the poor, this is likely to be an overestimate.

[13] The ratio of loans to savings is typically 2:1, as against the norm of 4:1. Basu and Srivastava (2005) report that the latter is also the actual. This is not corroborated by earlier field-work in Maharashtra (Gaiha, 2001).

[14] In a review of Maharashtra Rural Credit Project (MRCP), funded by IFAD, no defaulters were reported. For details, see Gaiha (2001). As noted earlier, this is significantly higher than recovery rates under SGSY in 2004 (Dasgupta, 2005).

[15] Basu and Srivastava (2005) report that the outreach is low considering that SHGs cover 12 million women in a country where 460 million people live on less than $/day. In fact, it is arguable that the outreach is even lower as the presumption that all SHG members are poor is not corroborated. For illustrative evidence, see Gaiha (2001).

Although this programme continues to be heavily skewed in favour of three southern states (Andhra Pradesh, Tamil Nadu, and Karnataka), the share of new loans for the four southern states (above three and Kerala) fell from 49 per cent in 2005 to 44 per cent in 2006, and of cumulative loans from 58 to 54 per cent. In 2005, NABARD identified 13 priority states accounting for 70 per cent of India's poor for location-specific strategies. Number of SHGs linked in these states rose by 68 per cent in 2005 and 51 per cent in 2006 (Ghate, 2007).

Table 10.1: Features of Microfinance Approaches[1]

Features	*SHG*	*Grameen*	*Individual Banking*
Clients	Primarily women	Primarily women	Primarily men
Groups	15-20 clients per group	Usually 5 clients per group (organised into centres of 4-6 groups)	Individual clients
Services	Savings and credit	Credit-regular cycle	Credit
Role of MFI staff	Guide and facilitate	Organise (groups dependent on staff)	Organise
Meetings	Monthly	Weekly	Individual transactions-often daily
Savings deposits	Rs 20-100 / month	Rs 5-25/week	Flexible
Interest on savings	Bank rate (4.25%)+profit share	6-9 per cent	6 per cent +
Initial loan amount	Rs 5-10,000	Rs 2-5000	Rs 5-15000
Effective interest rate	24-28 per cent	32-38 per cent	23-38 per cent
Insurance	Sometimes loans linked to health and life insurance	Sometimes loans linked to health and life insurance	Sometimes loans linked to health and life insurance
Development services	Some associated programmes	Small social projects	Enterprise support

Adapted from Sinha (2005).

A useful finding is that it costs about Rs 10, 000 to launch and train a group. One of the criticisms is that the amount NABARD provides to self-help promotion agency (for example, Rs 3000 per group to an NGO) is inadequate. Although NABARD expects these agencies to cross-subsidise from other activities, it is arguable that the annual promotional costs are no more than the annual subsidy spent by the central government on the SGSY programme (Ghate, 2007).

A recent study of four states (Andhra Pradesh, Karnataka, Orissa and Rajasthan) offers valuable insights into the functioning of SHG-Bank Linkage Programme (EDA and APMAS, 2006). 51 per cent of the members were poor, 55 per cent belonged to the SC/ST category, and 66 per cent of SHGs were single-caste SHGs. However, one-third had mixed- caste membership. 72 per cent of the membership had had no schooling at all. In only 51 per cent of the groups more than half the members had primary school education. This acted as an impediment to book-keeping and maintenance of records Average .monthly savings were Rs 45, and cumulative member savings Rs 2400. The modal interest rate charged on loans to members was 2 per cent per month. 77 per cent of the groups had borrowed from banks or federations at least once, for an average of 2.5 times. For a subset of the sample (with balance sheets) the ratio of external borrowings

outstanding to internal capital was 1.43. Loans were relatively well distributed among members, with low variance around the mean. The proportion of non-borrowers was 7 per cent. The proportion of defunct groups was 7 per cent, which is low considering that the average age of a group was 6 years.

While the number of dropouts is low, only a fifth of them were paid their full share of interest and other income on group operations when they exited, mainly because the records were not well-maintained. Record quality was good in only 15 per cent of the groups, moderate in 39 per cent and weak in 40 per cent (and unavailable for the remaining). Pass books were up-to-date in 72 per cent of the groups.

On the criterion that a loan is overdue if the repayment is overdue for 90 days, 24 per cent of current borrowers had overdues. Overdues were highest for the very poor borrowers. Another measure of portfolio quality is portfolio at risk (PAR). For 45 per cent of the groups the PAR (of 365 days) was 17 per cent.

Microfinance Institutions (MFI)

The MFI acts as an intermediary, as the SHG does, but borrows much larger amounts from the banks (mostly private banks without rural branches) for a much larger number of members (about a million for the largest MFI in India). These members are organised into groups- a five- member Grameen-type group, or a larger 'joint-liability' group (JLG), or even SHGs.[16] Lending to groups, regardless of the name given to them, involves the joint and several liability of all members. This is exercised through peer group pressure and the risk of being denied future loans. An important difference between SHG and other groups is that in the former the loan is a single loan to the group as a whole, which then decides how to allocate it among its members: while among other groups, the MFI records and tracks loans individually, although disbursement and collection are facilitated by the group mechanism (Ghate, 2007).

The MFI model in India is characterised by a diversity of institutional and legal forms. Beginning with SEWA, several registered societies and trusts started group-based savings and credit with donor funding in the 1980s. Towards the end of this decade, others began replicating the Grameen model, financed initially by donors but increasingly by apex financial institutions such as the SIDBI, Friends of Women's World Bank (FWWB) and Rashtriya Mahila Kosh (RMK). During the 1990s, several medium and large MFIs turned into Non-Banking Finance Companies (NBFCs), making it easier to attract investments as shareholder equity. Also, with the passage of the Mutually Aided Cooperative Society Act (MACs), the number of cooperatives registered under this act- including SHG federations- grew (Ghate, 2007).

Based on a sample of 68 MFIs for which data were available for the period 2003–05, there was rapid growth-63 per cent overall in terms of outreach in 2004–05, up from 46 per cent in 2003–04. Growth was, however, concentrated in two regions, the south and the east, which accounted for 95 per cent of the membership. It takes 5–10 years for an MFI to attain operational sustainability. Only when MFIs become large with an outreach of 50, 000 and gross loan portfolio (GLP) of Rs 20 crore, do they become sustainable (Sa-Dhan, 2005, and Ghate, 2007). However, using the same size-classification in terms of GLP, but a smaller sample, another survey reports that even medium MFIs are sustainable, and have positive returns on assets and on equity (MIX, 2006, and Ghate, 2007).

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[16] Note that Grameen-type lending is a special case of MFI model.

Comparative Analysis

A recent survey carried out by EDA Rural Systems in 2004 offers useful insights into their efficacy in serving the financial needs of the poor (Sinha, 2005). SHGs emerge as the preferred option in terms of flexibility of purpose, ease of access to loans, quick disbursal, low cost, and flexibility of repayment schedule. As groups mature, and savings accumulate, members have easier access to internal group loans of varying amounts and for different purposes at a relatively low cost. A more recent and richer assessment of the two models reviewed here offers additional insights (Ghate, 2007). An advantage of the SHG model is the empowerment of millions of rural women (currently 31 million) of which half are below the poverty line.[17, 18] Another is that its potential for expansion is greater, given the vast network of bank branches and Primary Agricultural Cooperative Societies (PACSs). However, a disadvantage is that the average loan size goes up much more slowly than in the MFI model, as it is tied to savings performance, and the loan cycles are much longer (the average tenor of bank loans to SHGs is 2.5 years as opposed to 1 year under the MFI model). MFIs, on the other hand, have the advantage that they can borrow huge amounts from the banks and increase loan size in response to demand. The MFI model does not, however, provide for savings (unless the MFI is a cooperative). But this is a result of the regulatory environment in India.

Cost-Effectiveness of SHG-Bank Linkage

A recent study of SHG-Bank Linkage, based on data collected from bank branches in Andhra Pradesh and Karnataka, corroborates its financial viability.[19] The main findings are summarised below:

- SHG banking is profitable in all cases, despite a relatively low interest rate. Return on average assets (ROAs) ranges from 1.4 per cent to 7.5 per cent, and operational self-sufficiency ratios (OSS) from 110 per cent to 165 per cent.
- SHG banking is more profitable than bank, branch or cooperative society, based on average cost.
- This is more so when ROAs and OSS ratios are computed using marginal costs.
- Higher interest rates — from 12 per cent to 15 per cent — will result in higher profits. But there is no guarantee that targeting accuracy would not diminish.
- The analysis, however, of empowerment of women is weak and sketchy, as the details of measurement and cross-validation are not given.[20]

Another recent study, undertaken in four states, compares regional rural banks, commercial banks and both models of SHG-Bank Linkages (that is, loans are given directly to SHGs in one, and through NGOs in the other)[21]. Although the transaction cost of lending to SHGs is more than the normal lending for the first loan, it falls markedly with the second loan (by nearly 48.5 per cent). When lending is done through NGOs, transaction costs are lower by 90 per cent, as compared with normal lending by branches. Besides, even without a portfolio of high value advances, rural bank branches can turnaround if a substantial share of their lending is through SHGs. Finally, the reduction in transaction costs to the borrowers is also large. Thus both borrowers and lenders benefit.

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[17] Note that this is substantially higher than our estimates. This is largely attributable to differences in the methodologies used.

[18] See also Fernandez (2007) for an exposition of the process of empowerment.

[19] For details, see Seibel and Dave (2002).

[20] For details, see Gaiha and Nandhi (2005).

[21] For details, see Satish (2005), and Srinivasan and Satish (2001).

10.4 Data

The present study is based on primary data collected from six villages in Pune district in Maharashtra (viz. Fursungi, Fulgaon, Zargadwadi, Dorlewadi, Godre and Botarde). After selection of villages, a list of SHGs in these villages was obtained. From the members' list, a random selection of participants who had availed of at least one loan was made. Thus, from each village, 12 participants were interviewed. Non-participants were also randomly picked from these villages making sure that Scheduled Castes and Tribes (SC/STs) and other deprived groups were included. Altogether, 25 non-participants- 4 from each village- constituted the control group.

Five officials at the District and Block levels (including Director, Rural Development Agency, Block Development Officer, Extension Officer) were interviewed mainly to get an overview of the role of microfinance in rural development and poverty alleviation.

Eight Panchayat/village council members were interviewed (including three Sarpanches (Chairperson of village council), one Deputy Sarpanch, two Panchayat members, and two Gramsevaks/village level workers). These were selected from the sample villages. They were interviewed because of their key role in implementing SHG-Bank Linkage programme, and to cross-validate the empowerment of women. Besides, a mixed group comprising a school teacher, a President of SHG Federation, an ex-member of Panchayat, and an ex-Sarpanch were interviewed for further corroboration.

In all, eight NGOs working in these villages were interviewed. Three animators from each block were interviewed, to understand better the difficulties encountered in forming SHGs, in organising their meetings, in maintaining the records of decisions taken, and whether the nature and quality of training imparted were appropriate.

Seven bank officials involved in microfinance were interviewed. While three of these belonged to field- level branches, the rest were posted at the district headquarters. One representative of MAVIM, which has been actively involved in SHG formation and training, was also interviewed to assess the quality of SHGs, their sustainability, and linkages with other SHGs and local institutions such as Panchayats, and banks.

10.5 Methodology

Different methods and data sources are used to assess the formation and impact of SHGs on the well-being of members and others. Attention is given to whether in addition to individual/household characteristics (for example, age, education, wealth, occupation, caste) village /community characteristics play an important role in the formation of SHGs (for example, density of formal/informal networks). In assessing impact, a detailed analysis is carried out of whether credit channelled through SHGs raises incomes, and savings, reduces dependence on local money lenders, whether it enables women to have greater autonomy in household decision-making, reduces domestic violence against women, broadens their public domain, and induces a greater sense of bonding/reciprocity and building of associational capital.

Cross-tabulations are supplemented by a detailed econometric analysis that allows more rigorous testing of key hypotheses. A main point of departure of the econometric analysis is that a two- stage procedure is used in which first the sorting of household members into participants and non-participants is analysed, followed by an assessment of

how the impact varies in terms of not just income but also broader indices of well-being that encompass autonomy of borrowers in both domestic and public domains.[22]

As empowerment has many dimensions and is hard to measure, cross-validation or triangulation through different sources of data and methods is necessary.[23]The econometric analysis carried out is one form of (method) cross-validation of household responses, with the advantage that the effects of various factors can be controlled for to focus on that of a specific household trait (for example, caste, or education or marital status). Another form of cross-validation (data) is by taking into account the views of bank and government officials, Panchayat members, NGOs, and others.

10.6 Findings

Targeting

Targeting accuracy can be judged using different indicators. These could be monetary or non-monetary. Both are used in the present study.

The largest proportion of SHG members (37.4 per cent) belonged to labour households — a highly poverty prone group — followed by others (34 per cent) and cultivating households (about 28 per cent). This contrasts with the distribution of the control group, as the share of those belonging to labour households was the lowest (20 per cent).

However, as shown in Figure 10.1, the majority of the participants were well above the poverty cut-off point of Rs 2800 per capita annually (at current prices).[24] Well over 90 per cent of the participants had incomes higher than this cut-off point. Even if the cut off point is raised by 25 per cent (that is, if it is taken to be Rs 3500), barely 14 per cent of the SHG members would be classified as poor. In fact, when the cut off point is doubled (that is, if it is taken to be Rs 5600), no more than 40 per cent of the SHG members were poor. So whatever the poverty cut-off point within this large range, the majority of the participants would be considered as non-poor or relatively affluent.

To the extent that SC/ST/OBCs are more prone to economic and other forms of deprivation- including social exclusion-the fact that over two thirds of the SHG participants belonged to them suggests that deprived sections benefited through this intervention. The fact, however, that even among the control group the share of SC/ST/OBC households was higher suggests that a large segment of the deprived groups was also left out. Moreover, since the share of upper castes among SHGs is non-negligible, it follows that the benefits also accrued to sections that were (relatively) affluent.

Economic well-being depends on some forms of capital. Human capital is an important component of it. Educational attainment is a specific form of human capital. A large fraction of SHG members is illiterate or possesses primary education. About 40 per cent

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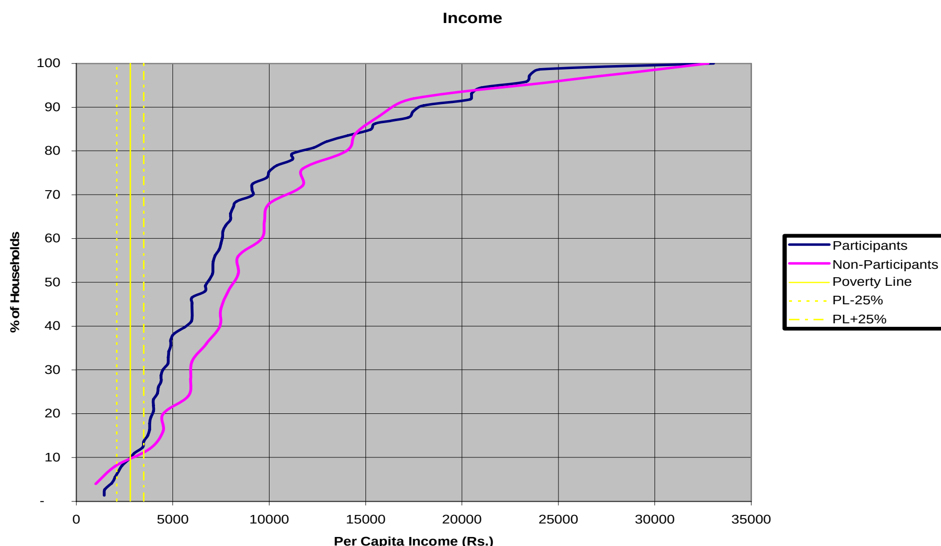
[22] This is based on a modified version of Heckman's selection model. A brief exposition is given in Annex 1. For details, see Greene (1993), and for an algebraic exposition, see Gaiha and Nandhi (2005).

[23] See, for example, a new and influential study edited by Narayan (2005), and a review by Gaiha (2006).

[24] This is based on a poverty cut-off point of Rs 15 per capita per month at 1960-61 prices, adjusted for price changes using the Consumer Price Index for Agricultural Labourers in Maharashtra. This cut-off point has been extensively used in the Indian poverty literature. For details, see Gaiha and Nandhi (2005). There have been some suggestions in the recent literature that this cut-off point is much too low. See, in particular, Sen (2005) and Srinivasan (2007). The latter, however, remains sceptical of anchoring poverty lines to average calorie norms.

possess middle level of education and a small fraction consists of matriculates or above. A similar distribution is obtained for the control group.

Figure: 10.1: Targeting of SHGs



Source: Gaiha and Nandhi (2005)

Nearly 70 per cent of SHG members were landless or nearly landless. The corresponding share of the control group was markedly lower (40 per cent). So to the extent that lack of ownership limits income enhancing options, SHGs covered a large subset of households disadvantaged in this respect. The average landowned among SHG members was 0.70 acre as against 2.02 acres among the non-participants.

Although a large majority of SHG members were permanently employed, many were seasonally or temporarily employed. In parts of Maharashtra with semi-arid or arid conditions, slack periods tend to be long. So to the extent that SHG loans help finance productive activities, the income gains would enhance welfare significantly. By contrast, a much larger majority of the control group reported that they were permanently employed.

Formation of SHGs and Other Features

First, an attempt is made to get a deeper understanding of how SHGs are formed, how long does it take to borrow, and SHGs' functioning.

A majority of SHGs were formed in ≤ 2 months, another 20 per cent in 2-≤5 months, and the remaining 20 per cent in ≥5 months. In fact, a non-negligible number of SHGs (10) were formed in ≥ 24 months. So there was considerable variation in the time taken to form SHGs.

Major roles were played by NGOs, and Village Panchayats (including Village Level Worker/Gramsevak). Although the role played by friends, relatives and members of the village community was less significant, it was far from negligible.

Well over half the respondents confirmed that the formation of their SHGs was influenced by other successful groups or a group that existed before and performed well. There was, however, considerable variation across the sample villages. For example, barely 36 per cent of the respondents confirmed such externalities in Godre, while 75 per cent did in Botarde. So it is imperative to understand why such externalities differ across the sample. It is interesting that over 65 per cent of SC/ST/OBC respondents acknowledged the positive impact of other SHGs. By contrast, a much smaller share of upper caste respondents did (about 36 per cent). Perceptions also differed by landownership. More than half of the near landless and landless shared this view while a much smaller share of those owning more than 4 acres did (barely one-third). A corroboration of this by group leaders and deputy leaders is significant-about 71 per cent of SHG leaders and Deputy Leaders.

The mean duration of SHGs was high in the aggregate sample (about 5 years) as well as in each of the 6 villages (ranging from about over 3 years to over 7 years). The range of membership also varied considerably. Since the minimum duration was 2 years, and over 48 per cent had been members between 2-4 years, it follows that survival rates of SHGs are high.

A clear pattern pointing to a close correspondence between membership of a network (associational capital) and of SHG does not emerge. Among SHG members, however, a large majority (about 89 per cent) reported that they belonged to small and closely knit groups, and a small but not insignificant share (7 per cent) to large and closely knit groups. In the control group also, a large majority belonged to small and closely knit networks but the share was smaller. However, larger fractions belonged to small or large loosely knit networks.

Functioning of SHGs

About a quarter of SHGs comprised 10 members or less; about 36 per cent comprised 20 members; and thus the largest concentration (about 38 per cent) was in the range of 10-20 members.

About 71 per cent of the leaders belonged to SC/ST/OBC households, and about 19 per cent to upper castes. About 14 per cent were illiterate, about 33 per cent had primary schooling and about 48 per cent had middle level education.

About 57 per cent of SHG respondents reported (properly specified) entry and exit rules such as entry requirements, size of group, attendance requirements, mandatory savings and refund of savings in case a member opts out. About 65 per cent confirmed monthly meetings. About 67 per cent reported that members regularly attended these meetings. About 73 per cent confirmed proper maintenance of records.

Judging by these indicators, most of the SHGs functioned satisfactorily.

10.7 Loans, Use, Yields and Repayment

Loans

First, some descriptive statistics on the period of interface between SHGs and banks, loan amounts, number of loans, and repayment rates are given, followed by an analysis of use of loans and yields.

Not only does it take time to form an SHG but also for an SHG to interface with a bank to start borrowing. Some illustrative evidence on the latter is given, as variation in it depends on several factors: quality of leadership, financial discipline among SHG members, and attitude of bank officials. Except in Godre and Botarde, the average time

taken was about a year or more. In Zargadwadi, for example, the average time for interface was about 33 months.

Average loan amount of a poor SHG member (that is, with income per capita ≤ Rs 2800) was considerably lower than that of a non-poor member (Rs 1916 and Rs 3088, respectively). Also, the total amount borrowed was much lower (Rs 7795 and Rs 12605, respectively).[25]

In general, average loan amounts were low and varied among the sample villages. The range of first loans also varied both *between* and *within* villages (for example, in Dorlewadi, the loan amounts ranged from Rs 600 to Rs 10000). Another striking difference is in loan amounts disbursed. Dorlewadi and Fursungi, for example, accounted for over 62 per cent of the loans disbursed.

What is also interesting to note is that many SHG members took subsequent loans. Few, however, did not. In three villages, there were a few respondents who did not take a subsequent loan while the maximum number of subsequent loans in each of these ranged from 7 to 9. In Zargadwadi, the maximum number of subsequent loans was 15. So, as a measure of catering to the financial needs of members and financial discipline among them, SHGs were performing well.

The repayment rates were high, with the mean for the sample (60 observations) being as high as 85 per cent and a relatively low standard deviation (26.59). Disaggregating the sample first by income categories, we note that the repayment rates were highest among the poorest (100 per cent), followed by affluent groups that is, >Rs 5600 (over 90 per cent).

In another classification based on caste affiliation, the SC/ST members had a high repayment rate (about 82 per cent), the Upper Caste members had a much higher rate (about 93 per cent), and Others had the maximum rate (100 per cent). As many among the SC/ST/OBC members are among the poorest, this is yet another confirmation of high repayment rates among the poorest.

The proportions of borrowers who missed repaying a loan instalment were, however, non-negligible-particularly in two villages viz. Godre (83 per cent) and Botarde (42 per cent). Although the importance of reasons stated varied with the sample village, at the aggregate level, irregularity of income was the most important reason, followed by the equally important roles of stringency of repayment schedule and contingencies (for example, illness). Even though based on a small subset of the sample (27 responses), these findings are plausible.

Use of Loans

While the poor use a higher share of loans for consumption than the non-poor, the former also spend higher shares on health and education, and production/investment. What is perhaps also somewhat surprising is that both the poor and non-poor spend relatively low proportions on repayment of earlier loans.

More than a moderate proportion of SHG borrowers used loans to buy assets (for example, 33 per cent of the borrowers in Zargadwadi). Of these borrowers, 38.5 per cent bought a goat, 15.4 per cent bought a buffalo or a cow, and 46.2 per cent bought other assets (for example, poultry). In the aggregate sample, 49 per cent of those who bought assets still retained them.

In response to a related question about who used the asset, about 32 per cent reported that the question was not applicable to them; about 38 per cent of the respondents claimed that they themselves did; 3 per cent reported that their husbands did; and about

[25] This is based on the credit history of each participant.

10 per cent reported that the asset was used by the family. Even if the share of the respondents claiming that they themselves used the asset was somewhat inflated, it is significant that male dominance is not so pervasive.

Loan Yields

The rates of return are a notional measure of profitability of SHG loan financed investments. Two caveats are necessary. (i) The adjustment for rents, interest and labour costs are based on whatever data could be extracted from household responses. So to claim precision for these estimates would be misleading. (ii) Moreover, while there is a small number of loss making investments (in fact two), in a large number of investments, the returns are quite high (over 100 per cent). The latter are not implausible, as small investments often yield high returns. However, it is unlikely that such high returns will be maintained when services provided (for example, tailoring) become more competitive. So generalisations from these rates of return are difficult.

Disaggregating these results by income and caste categories, we get a pattern of returns that runs contrary to the presumption that the poor lack the skills to engage in remunerative self-employment. Regardless of the poverty cut-off point chosen, a very high share of the poor earned returns in excess of 50 per cent annually. For example, if the cut-off point chosen is Rs 5600, over 57 per cent of the poor earned returns exceeding 50 per cent. Among SC/ST/OBC respondents, 68 per cent recorded returns above 50 per cent.

Table 10.2: Rates of Return on Investment

Annual Rates of Return (%)	*Relative Frequency (%)*	*Cumulative Frequency (%)*
≤ 0	5.3	5.3
0-25	23.7	28.9
25-50	7.9	36.8
50-75	18.4	55.3
75-100	21.1	76.3
≥100	23.7	100
Total	100	

Source: Gaiha and Nandhi (2005). These estimates are based on a subsample of respondents who used SHG loans for production.

Repayment of Loans

Who is responsible for repaying the loan was not answered by about 60 per cent of the respondents. About 10 per cent of the respondents claimed that it was their responsibility to repay the loan; about 26 per cent attributed it to their families; and the rest to their male spouses/household heads.

Turning to the question of who decided the use of income from SHG loans, about 9 per cent did not answer; about 21 per cent claimed that they did; about 6 per cent reported that their husbands did; and the remaining reported that it was a joint decision of the family (including cases in which household heads decided).

10.8 Savings

An important contribution of SHGs in inculcating financial discipline and in protecting the vulnerable from shocks is to induce the members to save.

As savings are a mandatory feature of SHGs, it is not surprising that either all or a large majority of members (varying from about 69 per cent in Fursungi to 100 per cent in Zargadwadi) reported regular savings. Among SC/ST/OBC members — usually a deprived and socially excluded group-about 82 per cent saved regularly.

Savings serve several purposes. These include meeting contingencies (for example, illness, death, loss of income), buying of assets and meeting health and education expenses of children. Out of the total responses of the participants, 47 per cent included savings as a form of insurance against contingencies; 39 per cent included savings for financing investment in children's education and health; and the remaining (14 per cent) included financing of investment in physical assets. Even among the poor, about one third of the responses favoured savings as an insurance against contingentcies, while the remaining responses emphasised use of savings for children's health and education. Among the non-poor, over 48 per cent of the responses favoured use of savings as an insurance against contingencies while about 37 per cent favoured use of savings for children's health and education. The remaining (about 14 per cent of the responses) also favoured use of savings to buy physical assets. Even if participant responses are classified by caste, about 46 per cent of the responses of SC/ST/OBC emphasised saving for contingencies, about 43 per cent drew attention to the need for financing investment in children's health and education, and the remaining (11 per cent) to using savings for buying physical assets. By contrast, Upper Caste responses favoured use of savings against contingencies (about 55 per cent), and over one-fifth for investment in children's health and education, and for buying physical assets. Even if we consider the responses of the landless-many of whom are among the poorest-about 45 per cent favoured saving for contingencies, and 40 per cent for investment in children's health and education. So what emerges from this evidence is the potential of self-insurance through savings.

The case for self-insurance is further reinforced by the regularity of saving deposits by the poor and deprived. In the aggregate sample of participants, about 86 per cent deposited savings regularly. Among the poor (i.e., those with per capita incomes ≤ Rs 2800) all saved regularly, while among the most affluent (i.e with per capita incomes ≥ Rs 10000) 94 per cent did. A high fraction of the landless (over 80 per cent) also saved regularly. Across castes as well, the variation is relatively small. About 82 per cent of SC/ST/OBC participants saved regularly as against a slightly higher proportion of Upper Caste participants (93 per cent).

10.9 Empowerment

Empowerment was corroborated by different sources in varying degrees. Clearly, some response errors arising mainly from interpretational ambiguities and a general reluctance to be negative about certain outcomes cannot be ruled out. So taking these responses at face value may be problematic. However, the consistency between different but related indicators of empowerment cannot be overlooked.

Just about all or a large majority of SHG participants reported that they had gained self-confidence, greater respect within the family, a more assertive role in family decision-making, and there was a reduction in domestic violence. A more specific question- whether the respondent had a more important role in children's health and education- however, yielded a positive response from 63 SHG borrowers (86.3 per cent).

In the broader community sphere, a considerably lower share of respondents yielded a positive response- the lowest was 53 (72.6 per cent) in terms of more active participation in *Panchayats*. This is plausible as women's participation in *Gram Sabha* meetings is often low-usually lower that that of men. Interestingly, the overall index of empowerment that takes into account both better awareness and participation in community activities is corroborated by 63 respondents (over 86 per cent).

Table 10.3: Indices of Empowerment

Index	*Yes (Frequency)*	*Yes (Relative Frequency %)*
Greater Self-Confidence	72	98.6
More Assertive Role in Domestic Sphere	71	97.3
Greater Respect within Family	70	95.9
More Assertive Role in Children's Health and Education	63	86.3
Reduction in Domestic Violence	59	86.8
Greater Participation in Community Affairs	60	82
More Active Participation in Panchayats	53	72.6
Increased Awareness, Self Confidence to Improve Family and Community Lives	63	86.3
Gained New Skills	31	42.5
Better Buying and Selling Skills	31	42.5
Better Prices for Products	26	35.6
Independent Marketing	29	39.7
Better Agricultural Practices	10	13.7

Source: Gaiha and Nandhi (2005)

Another form of empowerment is ability to market independently and acquire buying and selling skills. If these responses have plausibility, the range of positive responses would be relatively low. This is in fact the case. About 42 per cent of the respondents reported gaining buying and selling skills while 35 per cent corroborated negotiating better prices. Moreover, about 14 per cent of the respondents claimed influencing choice of better agricultural practices.

Small proportions of SHG respondents could identify the reasons underlying these forms of empowerment. The reasons emphasised included a stronger motivation, better inter-personal skills and social ties/networks of friends and relatives.

But these indices of empowerment do not reveal the 'costs'. Higher incomes and a broadening of spheres of activities entail greater responsibilities for women and extra hours of work. Out of 73 respondents, 38 (52 per cent) reported extra hours of work. Over 60 per cent of the respondents reported working over 2 hours a day in addition to their domestic chores. In fact, more than a quarter of the respondents reported working more than 5 extra hours a day. In the absence of reallocation of domestic responsibilities, some of the gains from extra incomes earned are likely to be at least partly offset by longer hours of work. Out of 73 SHG members, 48 reported greater responsibilities (65.8 per cent), 19 (26 per cent) denied, and the remaining 6 did not respond (8.2 per cent). So

this corroborates the preceding findings on extra work. Between the two, we are inclined to rely more on the latter, as the response to extra hours worked requires greater precision on the part of the respondents.

10.10 Cross-Validation of Empowerment

Two sets of evidence are summarised below: one is based on the responses of Panchayat members, District and Block officials, and representatives of financial institutions; and the second, based on econometric analysis of responses of SHG members and the control group, assesses the underlying factors.

Panchayat members, District and Block officials, and representatives of financial institutions confirmed empowerment with varying degrees of confidence. All Panchayat members (8), for example, confirmed improvements in the standard of living of SHG participants; six confirmed greater goodwill among village communities; seven reported greater trust and reciprocity among SHG members; however, few officials confirmed active participation of women in Panchayats and political activities. All officials (5) confirmed their active involvement in local campaigns for hygiene and sanitation. All representatives of financial institutions confirmed improvements in the standard of living of SHG members, greater social mobilisation, and a greater sense of goodwill among village communities. Besides, all confirmed more active participation of SHG members in local institutions (for example, village Panchayats).

As moderate but sustained economic betterment is key to empowerment, we have analysed the factors that contributed to higher income and greater responsibilities. Let us first consider the determinants of income.[26]

The econometric analysis shows that the relationship between per capita income and household size is negative and it weakens with household size. In other words, economies of scale in production and consumption offset the negative effects of household size on per capita income, as the former increases. Participants with matriculation level of education have higher incomes relative to the omitted group. Both participation and years of membership have a positive effect on per capita income while the interaction term has a negative effect. So the positive effects of joining an SHG and years of membership are diminished as their interacted value rises. Participants from male-headed households have higher incomes. Interaction of male-headed households with SC/ST affiliation, however, lowers the effect of male-headship while it reinforces the (weak) negative effect of SC/ST/OBC affiliation.

An aspect of empowerment is female autonomy in the use of a loan obtained through an SHG. Three exercises were carried out to assess the factors determining whether the wife made the decision, whether the husband did and whether it was a joint decision. Their results are summarised below.[27]

A few specific results are plausible. Neither participation nor duration of membership in an SHG has a significant effect on female autonomy. However, their interaction has a significant positive effect. Also, interaction of landownership with SC/ST/OBC affiliation has a positive effect while interaction of landownership and male-headship has a negative effect. Clearly, there are culutural norms that are not so easily modified. The fact that the interaction of participation and duration of membership has a positive effect

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[26] The econometric analysis is based on a probit in the first stage, and a robust regression in the second. For details, see Annex 1.

[27] In each case, as the left hand side variable is dichotomous, a probit is used in the second stage as well.

implies that economic betterment may result in greater female autonomy. In another specification, these results are corroborated along with the finding that female autonomy is lower both among Upper Caste Hindus and Muslims.[28]

Another probit on whether the male spouse made the loan use decision also yields some plausible results. Among Upper Caste households, for example, there is a lower probability of the male spouse being the decision-maker. By contrast, the male spouse has a decisive role if the borrower is illiterate. Also, this is more likely in households headed by someone who is a member of a Panchayat or holds another office. While participation and duration of membership lower male dominance, their effects are not robust. Nor is the effect of the interaction term.

The third probit is, however, the most interesting. The interaction term including landowning and upper caste households has a lower probability of joint decision-making about loan use. However, interaction of landowning and male- headship has a significant positive coefficient, implying that such households are more likely to have joint decision-making. However, the higher the probability of participation, the more likely is joint decision-making. So also is the case with duration of membership. But these effects diminish, as the interaction term has a negative coefficient. SC/ST/OBC households are more likely to have joint decision-making.

Two observations on these results are pertinent. One is that joint decision-making is hard to interpret. Not only is this culturally determined (as illustrated by the effects of caste, interaction of caste and landownership) but there is also an additional issue of whether the response is tactical or honest. More often than not, female respondents are reluctant to report any form of decision-making other than joint.

An important indicator of women's well-being is reduction of domestic violence against them. The probit results are revealing. Among illiterate members, there is lower domestic violence.[29] This is also the case with leaders. While participation in SHGs and duration of membership do not have significant effects, their interaction does. Among the SC/ST/OBC households, the chances of domestic violence are greater.

The results on overall empowerment (that is, better awareness, greater confidence and participation in village assembly meetings and other community related activities) — in part overlapping with contribution to associational capital — are illuminating.[30]

Empowerment among the first three educational categories (that is, illiterate, primary, and middle) is lower relative to that of the default case (that is, above matriculation). This is plausible, as one of the benefits of higher education is greater awareness of social issues and participation in community related activities. Age also contributes to empowerment but this effect weakens as age increases. Participation, duration of SHG membership and their interaction, however, do not have significant effects on empowerment. Leaders of SHGs display greater empowerment than other members.

Using an alternative specification, some additional insights are obtained. The positive contribution of Leaders persists. Although neither participation in SHGs nor duration of membership have significant effects, duration of membership interacted with SC/ST/OBC affiliation has a significant positive effect on empowerment.

Another index of empowerment focusing on participation in community events (for example, festivals, religious activities, village council meetings, women's groups) varied with village environment, was lower among labour households (relative to a residual occupational group), higher among those above matriculation level of education, lower

[28] Details will be furnished on request.
[29] The second stage regression is a probit, as the response is dichotomous.
[30] All second stage regressions are probits.

among upper castes, higher among male-headed households, and positively related to years of membership.

As stated earlier, these forms of empowerment entailed longer hours of work.[31] Whether a participant worked longer hours varied with male-headship of a household; the hours worked were lower depending on the interaction of duration of membership and educational level; as also among landowning households but higher with interaction of landownership and male- headedness; the hours varied with age but a diminishing rate, and were positively linked to both SC/ST/OBC and upper caste affiliations (relative to a residual caste group).

10.11 Exclusion

Attention was drawn to a low targeting accuracy in terms of an income cut-off point and a better targeting accuracy in terms of some other correlates of poverty (for example, low caste affiliation, landlessness, illiteracy). The fact, however, remains that many deprived individuals were unable to participate in SHGs.

An econometric analysis throws some light on the determinants of participation. SC/ST/OBC women were more likely to be excluded; neither illiteracy nor landlessness was a barrier; larger household size, however, constrained participation but at a diminishing rate. Another aspect of participation is duration of membership.[32] This was longer for SC/ST/OBC women; it was lower for women belonging to landowning households; it was also lower for women from households with male heads but longer for illiterate women from such households; and the duration was also longer for married women.[33]

An important observation by de Aghion and Morduch (2004) on assortative matching is pertinent here. They argue that in a group lending scheme, where all villagers (safe and risky) know each others' type, safe borrowers will form groups among themselves while risky borrowers will have to join hands with other risky borrowers. To the extent, therefore, that poverty and risks go together — greater vulnerability of low income households to idiosyncratic and other shocks — relatively affluent households are more likely to organise themselves into groups. This is corroborated by our survey in which assortative matching into poor and rich groups was reported by about 71 per cent of members of SHGs. Further insights into the selection process were yielded by an analysis of selection criteria. A majority of SHG members reported that exclusionary criteria were used. Ability to pay and save regularly as a prerequisite, confirmed by 19 per cent of SHG members, for example, would exclude those from labour households, among others, while affiliation to a BPL (below the poverty line) household — reported by 29 per cent of SHG members — would involve a different sort of matching.[34]

Other constraints reported by the members of the control group were lack of awareness (54 per cent), irregularity of income (39 per cent) and domestic resistance (7 per cent). Similar responses were obtained from NGO field-workers.

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[31] As there are number of responses with zero, a tobit is used in the second stage regression.

[32] This incidentally is the first stage probit, as shown in Annex 1.

[33] For details, see Gaiha and Nandhi (2005).

[34] BPL classification involves several criteria of deprivation-including income, ownership of assets, living conditions. The difficulty, however, lies in ensuring that these criteria are systematically applied. As this is rarely the case, often the correspondence between BPL and income- poor households is weak.

Additional light was thrown by the responses of Panchayat members, District and block officials, and representatives of financial institutions. Few believed that the poor were excluded because of high interest rates and/or stringency of financial discipline. However, remoteness of villages, absence of functioning local institutions, and lack of awareness of benefits of group lending were identified as major impediments in covering larger segments of the poor — especially by representatives of financial institutions.

10.12 Lessons

Although the temptation to simplify the characterisation of successful SHGs must be resisted, some conjectures can be offered, based on the perceptions of Panchayat members, District and block officials, and representatives of financial institutions. These also help identify some of the deficiencies in the implementation of delivering credit and other financial services through SHGs. On some key characteristics, there was considerable agreement among the respondents. Specifically, almost all representatives of financial institutions, NGOs and their field-workers were emphatic that group cohesiveness, savings mobilisation and high repayment rates mattered a great deal. It was also pointed out by them that group cohesiveness had less to do with group homogeneity than with a clear understanding of the benefits of group lending and other related services. Another presumption that Upper Caste leaders often serve as role models was firmly rejected by them (five out of seven). Majority of representatives of financial institutions (five out of seven) as well as of officials (four out of five) concurred that SHGs were more likely to be successful in villages with a high density of social networks and associations. Besides, the representatives of financial institutions were emphatic that formation of SHGs was quicker in the presence of a successful SHG. Four out of the seven responded that a new group could be formed in a month as there is greater awareness of benefits of group lending. Another view that emerged from the responses of these groups was the relative ineffectiveness of social networks in mitigating distress from community- wide/village level shocks. For example, six out of the seven representatives of financial institutions denied the protective role of social networks against such contingencies. Seven out of the eight Panchayat members were equally emphatic that these networks failed to protect village communities against such shocks. So there is a case for self-insurance through savings (Morduch, 2005). Finally, while sharing the concern for long lags between formation of SHGs and their interface with a bank, nearly all representatives underlined the importance of training, its duration and the need for monitoring.

10.13 Concluding Observations

Some observations are made from a broad policy perspective.

While the targeting of microfinance through SHGs was unsatisfactory in terms of an income criterion, it was better in terms of other indicators of deprivation such as caste, landlessness and illiteracy. What is, however, noteworthy is that the loans were used largely for health and education of children and for production-related expenses- especially by the disadvantaged. The rates of return on such investments were high. Little, however, can be said about their sustainability. Savings mobilisation through SHGs was highly effective too- especially in a context of vulnerability of rural households to a range of idiosyncratic and covariant risks, and ineffectiveness of informal social networks in protecting them against such risks. More significantly, using

different methods and data sources, various dimensions of empowerment were confirmed. Some of the mechanisms involved in it were identified and assessed. Not only do SHGs benefit from the presence of networks, the former also contribute to trust, reciprocity and associational capital (for example, through strengthening of local institutions). Domestic violence was reduced. However, greater responsibilities for women also involved longer hours of work.

In conclusion, to confine impact assessment of microfinance to conventional economic criteria of rates of return, and financial sustainability of MFIs would not be just narrow but misleading as well. The benefits through women's empowerment are substantial and reinforce the case for microfinance through SHGs on both equity and efficiency considerations.

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Annex 1:
Heckman's Selection Model

A brief exposition of this model and its variants used is given below.[35]

Suppose there is a selection variable z^* which is not observed. Rather, we observe only its sign and not its magnitude- in the present case, whether a woman participates in an SHG or not. So the model is formulated as follows. First, the selection or participation mechanism is specified.

$z^* = \boldsymbol{\gamma}'\mathbf{w}_\mathbf{i} + u_i$

$z_i = 1$ if $z_i^* > 0$,

$z_i = 0$ if $z_i^* \leq 0$, where $\boldsymbol{w_i}$ is a vector of variables that explain participation.

Prob $(z_i = 1) = \boldsymbol{\Phi}\,(\boldsymbol{\gamma}'\mathbf{w}_\mathbf{i})$,

Prob $(z_i = 0) = 1 - \boldsymbol{\Phi}\,(\boldsymbol{\gamma}'\mathbf{w}_\mathbf{i})$,

In the second regression, we estimate the effect of various individual/household characteristics, community level variables, and of participation derived from the probit, on variables such as income, and various measures of empowerment.

$y_i = \boldsymbol{\beta}'\mathbf{x}_\mathbf{i} + \varepsilon_i$ observed only if $z_i = 1$,

$(u_i, \varepsilon_i) \sim$ bivariate normal $[0, 0, 1, \sigma_\varepsilon, \rho]$,

where $\mathbf{x_i}$ is a vector of explanatory variables including a measure of participation from the probit.

Suppose that z_i and $\boldsymbol{w_i}$ are observed for a random sample of individuals, but y_i is observed when $z_i = 1$. This model is thus equivalent to

$$E[y_i | z_i = 1] = \boldsymbol{\beta}'\mathbf{x} + \rho\sigma_\varepsilon\lambda\,(\boldsymbol{\gamma}'\mathbf{w})$$

The parameters of this model are estimated using Heckman's two-step procedure. First, the probit equation is estimated to obtain $\boldsymbol{\gamma}$. For each observation in the selected sample,

$$\hat{\lambda}_i = \frac{\phi(\hat{\boldsymbol{\gamma}}'\mathbf{w}_\mathbf{i})}{\Phi(\hat{\boldsymbol{\gamma}}'\mathbf{w}_\mathbf{i})}$$ is computed.

Besides,

$\hat{\delta}_i = \hat{\lambda}_i(\hat{\lambda}_i + \hat{\boldsymbol{\gamma}}'\mathbf{w}_\mathbf{i})$ is computed.

In the second stage, $\boldsymbol{\beta}$ and $\beta_\lambda = \rho\sigma$ are estimated by OLS regression of y on $\mathbf{x}$ and $\hat{\lambda}$.

Some of the variants used here are: probits or tobits or robust regressions in the second stage, depending on how the outcome is measured. When, for example, the outcome refers to extra hours worked, there are many zeros and some positive numbers. In this case, a tobit is appropriate. In other cases, when the outcome relates to indices of empowerment (for example, autonomy in household decisions, acquiring of new skills) specified dichotomously (1 for yes and 0 otherwise, based on individual responses), a probit is used.

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[35] For an exposition, see Greene (1993).

11

Urban Vulnerability Reduction: Regulations and Beyond

V. Thiruppugazh

11.1 Introduction

Is willful non-compliance of regulations the basic cause of urban vulnerability for earthquakes in Gujarat? This chapter will focus on the causes of urban vulnerability in Gujarat, based on the lessons learnt in the recent Gujarat earthquake, through a case study of Ahmedabad.

'The world is steadily becoming more urban' (Boulle et al., 1997: 179). The UN report (2004) on world urbanization prospects projects that more than 50 per cent of the world's population will be dwelling in cities and almost all the growth of the world's population between 2000 and 2030 is expected to be absorbed by the urban areas of less developed regions. According to UN projections, the urban population in Asia is expected to become nearly double and the percentage of people living in urban areas in India will be 41.4 against the current figure of 28 per cent.

Urban vulnerability is increasing due to population density and increasing assets in the urban areas (Quarantelli, 2003). The increasing urban risk (Wamsler, 2006) results in urbanization and disasters impacting each other (Pelling, 2003).The risk in urban centers is compounded due to unplanned urbanization, development within high risk zones, lack of adherence to building codes (GSDMA, 2006), 'deficient urban management practices', and 'inappropriate construction practices' (Lewis and Mioch, 2005: 50).

In India more than 57 per cent of the land is prone to earthquakes and 38 cities each with more than 500,000 population are in the seismic zones of III, IV and V[1] (UNDP, 2002). Reduction of urban vulnerability for seismic hazards is one of the priorities of the national and state governments in India. Gujarat is one of the most urbanized states in India. Nearly 37 per cent of the population of Gujarat is urban (Census Commission of India, 2007). Ahmedabad, the business capital of Gujarat with a population of more than five million, and five other cities with a population nearly a million or more are situated either in seismic zone III or IV. As the entire state of Gujarat is prone to seismic hazard there is no urban area in Gujarat not vulnerable to earthquakes. In the past 339 years, earthquakes have occurred 19 times in Gujarat, of which 8 were of magnitude 6 and higher on Richter scale (GSDMA, 2005a).

This chapter aims to analyze some of the issues related to urban vulnerability in detail to arrive at strategies that are necessary to support the development of urban areas in Gujarat and India. The next section investigates briefly the causes and issues related to urban earthquake vulnerability in Ahmedabad. Section 3 deals with the lessons learnt

[1] India is divided in to four seismic zones based on the seismic hazard in ascending order of risk.

from the Gujarat earthquake and vulnerability reduction initiatives undertaken. Section 11.4 discusses the existing gaps and the lessons learnt. Section 11.5 concludes.

11.2 Urban Earthquake Vulnerability

Gujarat Earthquake

On 26 January 2001, one of the most destructive earthquakes ever to strike India occurred in the Kutch region of Gujarat at 8.46 am. The damage was spread in an area of 400 kms radius from the epicenter. The official magnitude of the earthquake is 7.7 on the moment (Mw) scale. The epicenter was located near the village of Chaubari, about 20 kms to the north of Bhachau town in Kutch district. Over 7000 villages, Ahmedabad city and 14 municipal towns were affected in the earthquake (GSDMA, 2002a). The official death figure is 13,805. About 215,000 houses collapsed fully and 928000 houses were damaged partially (Mishra, 2004: 58). In the urban areas affected by the earthquake 26,726 houses fully collapsed and 213,158 houses were partially damaged (GSDMA, 2007). Table 11.1 briefly shows the human response to major earthquakes.

Ahmedabad city with an area of 1300 Km^2 has a population of more than 5 million (including urban agglomeration) and a population density of 18420/Km^2. Ahmedabad has a literacy rate of 80 per cent which is the highest in Gujarat. Approximately 440,000 people live in slums (Government of India 2007). The development responsibility within the Municipal Corporation limit is with Ahmedabad Municipal Corporation (AMC) and the development in the urban agglomeration is with Ahmedabad Area Development Authority (AUDA).

The mega city of Ahmedabad tops the list of cities in composite risk and vulnerability ranking of cities in Gujarat based on base rock motion, surface amplification, liquefaction potential, slope failure potential, building vulnerability, demographic factor, and socio-economic factor (Oyo Corporation, 2004).

Researchers, experts and reconnaissance teams arrived in large numbers to study the causes of the disaster and offered a range of solutions. Jain commenting on the Indian earthquake problem writes:

> Quite often, our national or professional pride comes in the way of stating the problem as they are, leading to a loss of opportunity for finding a solution. Every stakeholder thinks that his role is the most crucial in addressing an issue. Hence, differences of opinion are expected between scientists, engineers, administrators, social scientists, and NGOs on how to solve the problem. (Jain, 2005: 1464)

Causes of Vulnerability: Pre-earthquake scenario

It is argued that in Gujarat a seismic hazard was turned in to a massive disaster by political and bureaucratic failures (Wisner et al,. 2004). The failure of buildings in Ahmedabad is attributed to : inadequacy for seismic safety and non-compliance of building codes (EERI., 2002; Mistry et al., 2001; Menum and Mistry, 2001), substandard construction and callous contractors and builders (*Times of India*, 2001), and lack of regulation and enforcement of building codes (Yates, 2002), poor quality of construction (EERI, 2002: 164) and poor quality of material (Goel 2002). Other causes of vulnerability were old building stock (Wisner et al. 2004), lack of training and education in earthquake design and construction (EERI, 2002), and lack of professional engineering association (Mistry et al., 2001). Most of the causes attributed for the urban earthquake vulnerability in Gujarat, such as lack of building safety enforcement, lack of land use planning, and lack of: design, inspection, plan review, and material quality , and lack of

insurance are similar to those attributed to the urban earthquake disasters in Turkey, Greece, Taiwan (Shapiro et al., 2000) and many other countries.

The numerous studies, reconnaissance reports and fact finding missions which pointed out mainly the technical reasons for the failure of buildings in Ahmedabad, did not address adequately the role played by the market, issues related to urban development, and problems with development control regulations.

Regulation and Responsibility

There are two ways of addressing the causes of vulnerability. One is through the regulatory mechanism and the other is through responsible behavior. It is recognized that the two are not mutually exclusive, however research articles, reports and evaluations done on Gujarat earthquake mainly conclude that lack of regulation and enforcement as the main reason for collapse of buildings in Gujarat in general and Ahmedabad in particular (EERI, 2002; Goel, 2002; GSDMA, 2002a; Jain 2005; Menum and Mistry 2001; Mistry et al., 2001; Murty et al., 2005; Wisner et al., 2004). Though the Indian Standard code IS 1893–1984 is quite advanced the seismic design provisions are not mandatory (EERI, 2002; Menum and Mistry, 2001). IS codes are not mandatory and it is up to the concerned Urban Development Authorities or Municipal Corporations to include the IS codes as mandatory provisions in their by-laws.

It is difficult to pinpoint exactly who is responsible for lack of enforcement of the regulations. This problem is not unique to Gujarat or India. 'Hazard mitigation occurs in a morally diffused environment' and as it is not possible to fix clear responsibility, 'everyone is responsible and no one is' (Godschalk et al., 1999). Though the responsibility is shared among various stakeholders, the complex market of real estates, plethora of acts and regulations and technical nature of safety requirements do not provide a level playing field to all the stakeholders.

In the Municipal corporation areas and particularly in the Ahmedabad Municipal Corporation area, according to the General Development Control Regulations (GDCR),[2] the developer has to submit a certificate of undertaking duly signed by the structural engineer to design for the hazard safety requirements based on the soil conditions while applying for building permission (AUDA, 2004). Thus there is an indirect system of compliance of building codes (EERI, 2002: 334) through self regulation. Thus structural safety is the responsibility of the builder/developer not the municipal engineers[3]. Many builders and professionals accept that it is not the duty of the municipal engineers to ensure quality in private constructions and it is the responsibility of the site engineers, and builders. Bimal Patel, a leading architect commenting on the responsibility of municipal engineers says:

> When Municipal engineers are not the executing authority, given the large scale construction activity in Ahmedabad, it is unrealistic to expect a municipal engineer to stand at the construction site to ensure quality. More over as local authority, AMC should be concerned about public good and should take adequate care to ensure safety in places of public access. The private dwellings should be the responsibility of the developers, owners and builders. (B. Patel, 2007)

The system of self regulation, though did not fail completely, resulted in large scale non-compliance of building codes by the private developers and builders. Large number

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[2] The General Development Control Regulations are framed under Gujarat Town Planning and Urban Development Act which regulates all development in the urban areas.

[3] According to the GDCR, the town development department verifies only the ownership, plot number, right of the owner, and building by-laws related FSI, and so on, .

of engineered and traditional structures withstood the earthquake, providing the proof that good construction practices existed (Mistry et al., 2001).When many private buildings collapsed in the earthquake, not a single government building collapsed in Ahmedabad. 'Most of the government departments handling building construction would tend to follow the codes' (EERI, 2002: 333) due to the fact that there is an elaborate mechanism with rules, approval protocols and procurement procedures in government for construction of buildings. There are three types of errors attributed to unsafe building construction: error of intention, error of ignorance and error of execution. The error of intention does not apply to government departments, for there is no motivation for government engineers to intentionally under-design and compromise with safety when the cost of construction is met with government funds (Jain, 2007). Government authorities followed the building codes even though there was no external enforcement agency. The error of intention plays a major role in private constructions resulting in unsafe building stock.

EERI recovery reconnaissance report on earthquake rebuilding in Gujarat captures clearly the lack of professional ethics of engineers:

> There is an unspoken rationalization that is acceptable practice for structural engineers to design differently for private builders than for the government. Builders pressure engineers to cut costs, while government agencies do not. If one engineer refuses to supply a builder with a structural design using lower quality of materials, another will agree to do so. (Murty et al., 2005: 50)

One of the examples cited by many for lack of professional ethics among the engineers is the widely prevalent practice of registered structural engineers signing the certificates and drawings prepared by unregistered structural engineers for money undermining the system of accountability.[4]

Housing development in Gujarat, particularly in big cities, is entirely in the hands of private developers. Increase in urban population and demand for prime urban space create enormous pressure on the land in and around the business district resulting in not only skyrocketing of the land prices, but also unregulated growth in hazard prone areas. Housing market in cities is based on 'Bankable Schemes'. For the huge middle class, purchase of a house or flat is the realization of a life time dream facilitated by bank loan and borrowings, and the cost of the house is a major consideration not the safety norms. Cutting corners due to competition is one of the reasons for developers diluting the quality and preferring cheap designs. 'The building industry is largely controlled by development and real estate interests who strive to keep costs down' (Comerio, 1998: 16), and Gujarat is no exception. Yates commenting on the cost cutting practices writes:

> If customers do not know about an earthquake code or don't understand the benefits to the customer or community of following it, then there will be no market preference for designers and builders to follow it. An even worse outcome occurs if there is a cost advantage by not following the code. The result is that companies do not follow the code. And if a company does, then the market will penalize it for doing so. (Yates, 2002: 9)

According to Anil Bakeri, a leading developer in Gujarat:

> Out of the 130 buildings which collapsed in Ahmedabad only two high rise buildings collapsed and the remaining buildings were mostly low rise buildings with ground plus three or ground plus four stories. It is estimated that there are about 7000 such buildings in Ahmedabad but less than one per cent of the buildings collapsed. If one considers the fact that more than 98 per cent of the buildings which were not designed to the seismic safety norms survived, then the reasons

4 AMC has a system of annual registration of engineers and architects. Certificate of undertaking can be given by only a registered structural engineer.

for failure should be lack of quality rather than unsafe design. Builders are entirely responsible for poor quality of construction. (Bakeri, 2007)

Regulation and Awareness

One of the reasons for lack of demand for seismic safe houses is the lack of awareness on the part of stakeholders regarding the seismic hazard and vulnerability which existed in Ahmedabad. Before Gujarat earthquake, though many earthquakes have occurred in India in the recent past except Jabalpur earthquake 1997, all others occurred in the rural areas. Latur earthquake affected mainly the rural districts of Latur and Osmanabad. In Latur earthquake, which occurred in 1993, though the damage and destruction was massive, mostly non-engineered stone masonry houses in rural settlements, where buildings construction is entirely in the hands of local artisans with limited skills collapsed (Jain et al., 1994). In Jabalpur earthquake, though urban, only 38 people died and 8546 houses collapsed (Jain et al., 1997). Jabalpur earthquake did not have significant impact on the general population and the media.

The fact that in the city of Ahmedabad, which lies 300 kms from the epicenter, more than 70 multi-storey buildings collapsed (Vatsa, 2001) came as a rude shock to many. Ahmedabad registered second largest death figure of 752 , next only to district Kutch[5] which registered a death figure of 12,221 (Mishra, 2004). In Gujarat earthquake, people witnessed large scale collapse of multistoreyed Reinforced Cement Concrete buildings, multi-storey buildings collapsing like pack of cards and pucca buildings razed to the ground. For the first time in India the urban population, media and governments woke up to the existing urban vulnerability for earthquakes. In the pre-earthquake market, seismic safety did not count.

Indian society is not a safety conscious society. For example, despite the fact that about 100,000 die every year in road accidents and more than 360,000 road accidents take place every year (National Crimes Record Bureau, 2007), wearing of helmet is still not compulsory in many states. In the states where it is compulsory, there is gross violation.[6] Exemptions from the law are always sought in the name of religion or gender. It is unrealistic, therefore to expect that those who are not concerned about safety in issues of every day risk will show concern about seismic safety for earthquakes which have a return period of hundred or two hundred years. Lack of civil society and advocacy groups concerned with disaster mitigation is one of the reasons for low public awareness.

Regulation and Confusion

As mentioned the multiple actors in urban development process are governed by regulations not always updated to current scenarios. As a result there are loopholes in the system and in the GDCR which could be manipulated. The open spaces and balconies which were not counted for Floor Space Index (FSI) were later covered and converted in to living space by the owners. This lead to the emergence of ‘floating’ column concept wherein the columns of the floors above the first floor terminated at the first level, and did not go directly to the foundation resulting in a major compromise in the integrity of the structure. There is no distinction between the buildings built for self use by the owners and constructions done by real-estate developers. Multiplicity of enabling legislations and enforcement agencies has resulted in lack of clarity of roles and

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5 Kutch district was the epicenter of the earthquake and hence the deaths in Kutch were more than the death in other districts.

6 Exemptions from the rule are sought in the name of religion or gender. The fact that recently a group of lawyers protested against the rule and there were wide protests by public against the rule speaks volumes about the lack of safety consciousness among public in India.

responsibilities. The capacity of enforcement agencies has not been evaluated before formulation of regulations. Lack of accreditation of laboratories, lack of a due process for fixing responsibility for building failures, lack of timely revision of GDCR making it outdated, poor and ambiguous drafting of some of the provisions providing scope for multiple interpretations, lack of consideration of the market forces are some of the basic reasons for violations of safety norms and unregulated development (Patel and Walker, 2002).

In order to address the problems in GDCR, one also has to address the problems in Gujarat Town Planning and Urban Development Act (GTPUDA). The Act needs revision with respect to division of responsibility between Government and local authorities, licensing of professionals, scope of development regulations and many other provisions. There are also authorities such as Area Development Authority, Industries Development Authority, and Notified Area Authority, and so on, creating regulatory overload on the government.

11.3 Vulnerability Reduction: Post-earthquake scenario

The lessons learnt included the need for: better regulatory control and enforcement mechanism, integration of development with disaster mitigation, transparency and accountability in the system, capacity building and training, information, education and community outreach activities to create awareness among public.

Disasters also provide an opportunity (Lewis and Mioch, 2005). Every major disaster opens a window of opportunity for initiating disaster risk reduction measures. The shattering of the illusion of safety of the cement concrete jungle in Ahmedabad city and large scale devastation in many towns and villages, the experience of International funding organizations, media pressure, terms and conditions of the donors or funding organizations, availability of funds for risk reduction and capacity building measures, and the lessons learnt in the disaster facilitate new policy formulation and creation of techno-legal regimes for vulnerability reduction. Government of Gujarat took advantage of the window of opportunity, and initiated a number of activities for vulnerability reduction and long term disaster management in Gujarat.

In order to improve the engineering skills in the state the syllabus of the engineering curriculum was revised to include earthquake engineering as part of the civil engineering syllabus. Training of teachers of engineering colleges, engineers in government and municipal corporations, and masons were undertaken. More than 29,000 masons and 6000 engineers have been trained. Competency based certification of masons was introduced.

Guidelines for construction of earthquake resistant houses using locally available material and low cost material have been prepared by Gujarat State Disaster Management Authority (GSDMA). Insurance awareness drives and seismic safety awareness campaigns through print and electronic media were also undertaken many times. Home owner’s guide for seismic safety was published and made available to public at large to educate them on the basic requirements of seismic safety. Numerous sensitization seminars and workshops were held for designers and practicing engineers.

The activities mentioned above and other numerous activities undertaken by GSDMA for risk reduction in Gujarat including Ahmedabad Municipal area are outlined in detail in various publications and reports of GSDMA (GSDMA, 2002b; 2003; 2005b), but this chapter will focus on the initiatives related to urban vulnerability reduction.

A case in point is the amendments undertaken by Government of Gujarat in the GDCR, on the suggestion of government of India,[7] by appointing a technical committee of experts on 9 February (within two weeks of the earthquake) to suggest changes in the development control regulations dealing with grant of permissions for construction of buildings. The state government also suspended the issue of grant of building permissions throughout the state till the amendment of the GDCR. The initial order issued based on the recommendations of the committee on 27 March 2001 was revised through a consultative process by holding a meeting with various stakeholders who made representations[8] regarding implementation of certain provisions of the order. The final orders were issued on 29 May 2001, to include regulations related to structural design as per National Building Codes and Indian Standards Specifications.

Though the final order for amendments was issued through a process of consultation, one of the important factors for acceptance of the *Suo Moto* order of the government, issued for the first time in contrast to the normal procedure,[9] was the suspension of building permissions till the revision of GDCR. The other important factor was the police cases filed against the builders and professionals after the earthquake and opinions of the experts regarding lack of regulation and enforcement as the main cause of building failure in urban areas.

Major changes to plug the loopholes in GDCR were brought through amendments. The method of calculation of FSI was revised and the exemption given for open spaces and balconies were withdrawn. The power to condone FSI violations was cancelled. The roles and responsibilities of the structural engineer, engineer, architect, site supervisor and the builder have been defined. The requirement of structural safety in terms of IS codes for seismic, wind and fire safety, and quality control requirements were clearly spelt out in the GDCR. Mandatory zoning and land use based on hazards have been introduced for vulnerability reduction. Qualifications for registration of engineers have been amended. A provision of registration of builders/developers has been made.

Changes have been made in the processes also. For ensuring structural safety, as per the amended GDCR, the certificate of undertaking needs to be signed by the builder, structural engineer and the architect. It is mandatory to submit the structural drawings of the building and completion certificate jointly signed by the structural engineer and the architect while applying for occupancy certificate. Federation of Real Estate Developers Association of Gujarat voluntarily adopted a code of conduct on 9 May 2003 to ensure building safety and quality. Gujarat Professional Civil Engineers Act 2006 was passed in

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7 Government of India wrote to the state government immediately after the earthquake to urgently put in place a techno-legal regime for buildings through necessary modifications in building bye-laws and regulations, land use zoning and development control regulations and town planning acts. Government of India was aware of the problems of urban vulnerability even before the occurrence of Gujarat earthquake. Vulnerability atlas of India was prepared by Ministry of Urban Development in 1997, and the Ministry also came up with a report prepared by experts in 1998 for urban vulnerability reduction through changes in the physical planning process, development control regulations and town planning acts as a follow up of Yokohama strategy for safer habitat.

8 Representations were made by Gujarat Urban Development Authorities Association, Institute of Architects, and Association of engineers, Association of consulting engineers and Municipal Corporations.

9 The usual procedure for amendment in GDCR is that the concerned development authority passes a resolution suggesting changes and sends the same to the Urban Development Department. The Department publishes the same and invites objections and suggestions from the stakeholders. Based on the objections received, the department, if necessary makes changes in the proposal and after due process the final order is issued. This time consuming quasi-legal procedure was cut short for the revision of GDCR after the earthquake, Government invoked the powers vested with it under section 122 of the Gujarat Town Planning and Urban Development Act 1976 and issued orders on 29 May 2001 bringing the amendments in to effect from the date of publication of the order.

the Gujarat Legislative assembly to empower the engineers and to set up an engineering council for testing the competency of engineers and issue licenses, replacing the system of registration of engineers with the Municipal Corporations.

In India, the profession of civil engineers is quite unorganized, due to lack of legislation to regulate the profession, unlike the professions of medicine, law and charted accountancy which are governed and regulated by legislations (EERI, 2002). As there is no licensing or other system of testing the competency of engineers in the country, ‘any person with a degree in Civil Engineering can generally practice as one’ and in the absence of a system, ‘there is no mechanism for the client to ensure that the engineer involved in the project is indeed competent in general and in seismic engineering in particular’ (EERI, 2002: 335). There was no initiative at the level of Government of India for the setting up of an engineering council at the national level by passing an act in the parliament but Government of Gujarat took the initiative to set up the engineering council of Gujarat to ensure safety, accountability and to encourage high standard of engineering.

GSDMA, after many rounds of consultations with the practicing engineers, engineering colleges, and consulting firms prepared the prepared the draft bill. The process which was initiated in 2003, took three years to pass through consultations, correction, and legal scrutiny before it could be placed in the Legislative assembly for approval. Despite the consultations held and consensus arrived before passing of the bill, the engineering community is reluctant to take up the responsibility and thus the creation of the council has not taken place even after one year of passing of the Act. It appears as though, the engineering community, while wanting empowerment, is not willing to take responsibility that goes along with it.

11.4 Regulations and Beyond

Regulation and Enforcement

All the stakeholders agree that the quality of construction has improved, builders/developers, engineers and architects have become more responsible and municipal engineers have also become more cautious. The very fact that a copy of the structural drawing of the building will be in the custody of Municipal authorities has created a sense of caution among the engineering community (B. Patel, 2007). According to many structural engineers more than 90 per cent of the post-earthquake constructions are safe and despite the increase in construction cost, people are willing to pay considering the fact that the cost escalation is due to factoring of earthquake resistant design in the construction (A. Patel, 2007)

Is Ahmedabad safe today, after six years, compared to what it was before the earthquake? The question is difficult to answer for two reasons. One important reason is the existence of a large number of unsafe buildings constructed before the earthquake, but not damaged in the earthquake. The other reason is the absence of a mechanism of verification of the safety of buildings constructed after the earthquake.

In the amended GDCR also, the responsibility for enforcement of the building codes and safety provisions is still with the developer, architect, engineer and structural designer. There is no system of enforcement, and the system of self regulation continues. As abundant caution, everybody has been made responsible for everything. Yates attributes (2002: 4–8) ‘consensual neglect, regulatory over load, cutting corners, inadequate resources for enforcement, penalties little known and inappropriate mechanism’ as the reasons for non enforcement of regulation.

Third party audit for enforcement of quality and structural safety is one of the mechanisms which will enable enforcement in case of mega cities like Ahmedabad where there is regulatory over load and inadequate resources for enforcement. Third party verification of structural design for specified buildings has been made mandatory in Delhi Municipal Corporation. In Bombay Municipal Corporation a high rise committee has been constituted to pass buildings of 70 meters and above in height (Sheth, 2007). The system of registration of engineers based on experience should be replaced by a system of competency based registration. Engineering council should be set up to quickly to issue licenses to engineers based on competency. The system of registration of builders is yet to be implemented.

In order to enforce compliance 'prosecutions for failing to comply actually have to occur and be seen to occur' (Yates, 2002: 7). Regarding penalties, it is not the severity of punishment which will reduce violations, but only certainty of punishment will reduce the violations. Clarity of roles and responsibilities in regulation is needed to punish violations.

GDCR has been amended to include proper land use planning and integration of safety planning with spatial planning. Along with the enforcement of prohibition of settlements and restriction of settlements in the hazard prone areas, the housing needs of the urban poor should also be considered. Unless conscious efforts are made to tackle the housing problem of urban poor, illegal housing development in hazard prone areas cannot be prevented. Development of alternative sites (Tipple, 2005), and provision of affordable housing for the poor should also be given priority to avoid settlements in hazard prone areas.

Regulation and Transparency

Individuals in the design and building professions play an important role in hazard mitigation (Godschalk et al., 1999). In the present system professionals are not part of the enforcement mechanism. Professionals should be made partners in enforcement of regulations by empowering them and making them more responsible and accountable. AMC should avoid the all or none approach regarding the safety of the buildings and concern itself only with buildings of certain critical nature and ensure safety through a system of third party audit. In order to avoid consensual neglect, practicing professionals and experts should be made part of the committee for drafting the GDCR. The discretionary powers of granting exemptions and condoning violations should not vest with any individual and it should vest with a committee consisting of members of professional bodies, civil society representatives and experts.

The town development department should be restructured to meet the emerging challenges of vulnerability reduction. The present system holds every one responsible for everything without any role clarity and when it comes to actually fixing responsibility, nobody can be really held responsible for anything. A system of clear roles and fixed responsibilities should be evolved to make the department more accountable. There is also need for capacity building by providing techno-legal training before a new job is assigned to an engineer through transfer or promotion. The current system of promotions and assignment of responsibility is not based on capabilities, merit and educational qualifications. One can join the department as a sub-inspector with a diploma and rise up to the level of Town Development Officer (Head of the Department) through seniority based promotion. A system of lateral entry for people with higher qualifications and merit based seniority will ensure that qualified personnel occupy responsible posts. In the current system the city is divided into wards and zones and inspection of all the buildings in the ward regardless of the size, height and utility of the buildings in the ward is done

by the designated inspector of the ward. There is a need for restructuring the department to ensure that critical buildings and buildings of certain categories are inspected by more qualified and technically competent engineers of the department. Transparency, not only in dealings with public but also within the department is essential to ensure the effectiveness of the enforcement mechanism.

'People have a right to feel protected in their communities, yet equally they need to be aware of their shared responsibility to protect themselves' (Lewis and Mioch, 2005: 50). Information, education and communication activities should be taken up on a large scale to educate people about hazards, vulnerability and minimum safety requirements. Enlightened consumer is an empowered consumer who can create a market for safe structures and enforce compliance through market.

Regulation and Rating

The buyer of a house or flat, as said earlier is not aware of all the technical requirements of an earthquake resistant building. Even if the consumer is aware of the requirements of IS a code for seismic safety he has no way of knowing if the building has been constructed according to the codes and if quality control has been taken care of. The present system of self-regulation cannot assure the public about the safety of the building. In many products government provides a choice to the consumers through certification by Bureau of Indian Standards and in products which have health and safety implications ISI certification is mandatory. Without a mechanism to inform the buyers about the quality and safety of the buildings the consumers are at the mercy of the developers without any choice.

The developers due to their knowledge and understanding of the field of real estate stand at an advantage, and exploit the loopholes in the system to maximize their profit, while the less informed customer is at a more disadvantageous end (Preethi, 2005). Preethi in her thesis suggests a credit rating for developers based on track record, project management capability, financial risk profile, number of projects in hand, and so on, by an independent credit rating agency such as Credit Rating Information Services of India Ltd (CRISIL). While rating of builders will help people to buy houses or Flats from a highly rated builder with confidence, it is not a quality and safety rating of the structures. Quality and safety certificate will have cost implications. Can there be a safety rating of the buildings? Should it be optional or mandatory? These are issues for further research.

Regulation and Compliance

Hyogo framework of action (UNISDR, 2005) urges the governments to adopt, or modify wherever necessary, legislation to support disaster risk reduction, including regulations that encourage compliance and that promote incentives for undertaking risk reduction and mitigation activities. Regulation which has utter disregard for market is bound to fail and hence the system should be made responsive to the market forces. Huge stock of unsafe buildings exists today in Ahmedabad. The existing building stock cannot be made safe by regulations for retrofitting. Only a system of encouragement in the form of incentives and tax benefits can motivate owners to undertake retrofitting to reduce vulnerability. Structural safety can be linked with insurance premium and reverse mortgage.

Improving market based control mechanisms such as taxation and pricing, reduction of insurance premiums and lesser deductibles for building constructed as per building codes (Kunreuther, 1994), low-interest loans for retrofitting of unsafe buildings, reducing adverse selection by promoting insurance as a mandatory requirement for loans and mortgages (Kunreuther, 1994) are some of the steps that can be undertaken to enforce the

regulations indirectly. In order to increase the awareness of consumers and public, massive awareness campaigns can be started by providing information regarding hazards to all the individuals in the hazard prone areas or by providing a hazard map of the area to every household, clearly indicating the mitigation measures to be undertaken including safe construction practices.

In the aftermath of massive disasters the Aid Industry steps in and large amount of national and international aid pours into the affected areas resulting in too much of aid. In fact most of the donors can shift their humanitarian aid focus from post-disaster relief to pre-disaster mitigation and fund retrofitting of unsafe structures, information campaigns, and promotion of safe construction practices through civil society involvement. ‘International donor bodies, government officials, NGOs, and the private sector . . . need to focus their collective energies to create a safer world for urban dwellers through a series of innovative approaches to meet this challenge’ (Davis, 2000: 77).

Though willful non-compliance of regulations is one of the reasons for vulnerability, there are many other reasons for non-compliance of norms. Regulation and enforcement are necessary, but what is needed is an enabling environment for the stakeholders to follow the regulations. Creation of an enabling environment goes beyond regulations and enforcement to address the issues of transparency, accountability, partnerships and market forces. Good urban governance is important for disaster mitigation and management (Lewis and Mioch, 2005) and ‘to build a culture of safety where disaster planning and management is accepted as part of normal life and a priority concern of good governance (Davis, 2000: 79).The system should be made more compliant. The sensibility of the system should bring majority of the stakeholders in to a mode of willing compliance without the need for penal action.

11.5 Conclusion

Gujarat Earthquake is a pointer not only towards the problems of urban vulnerability but also towards the need for a total systemic change in town planning and urban development in Gujarat. Regulation and enforcement of seismic codes are essential for creating a safe built environment and to reduce physical vulnerability in urban areas. But failure of enforcement of regulation should not lead to creation of more regulations. There is no guarantee that the same mechanism which failed to enforce the existing regulations will be able to enforce additional regulations. Not only politics depends on regulation and enforcement (Leftwich, 2004) but lack of regulation and enforcement can also be politics. One has to understand the causes for the failure of enforcement and the politics of lack of enforcement, which resulted in a win-win situation for all the stakeholders: the authorities could avoid the regulatory overload, the builders maximized their profits and the public got houses at lesser costs. Every body seemed to be a winner till the occurrence of the earthquake. Lack of clearly spelt- out punitive measures, long drawn judicial process, and lack of civil society demand for safety compounded the problem of vulnerability.

The case study of Ahmedabad indicates that without addressing the fundamental issues which fail to create an environment of compliance, enforcement of regulations is not possible. Vulnerability reduction for earthquakes is not only a technical problem but also a legal, political and socioeconomic problem which needs a holistic approach beyond regulations.

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PART V

SECTORAL ISSUES

12

Agricultural Trade Policies and Rural Poverty: Where is India Heading?

Garry Pursell & Peter Warr

Most of Asia's poor still live in rural areas and a high proportion are involved in direct agricultural production. One policy approach to this enduring social problem of rural poverty is to protect the agricultural sector against competition from imported agricultural products. Within Asia, Japan and Korea have adopted highly protectionist agricultural policies and several other developing Asian countries show signs of moving in a similar direction. India's formal agricultural policies are very protectionist, but at present the outcome of these policies is on balance about neutral in relation to the manufacturing and the services sectors.

In the first part of the chapter we argue that as a policy solution to the problem of rural poverty, agricultural protection does not work. We place the issues of rural poverty and agricultural protectionism in Asia into a longer term context and make the following points concerning the relationship between them.

1. During the process of economic development the share of agriculture in total GDP declines. The reasons include both demand and supply side forces.
2. The share of agriculture in total employment also declines, but much more slowly than its share of GDP. This means that agricultural incomes decline relative to incomes outside agriculture.
3. Rural people do not leave agriculture quickly enough. This is why rural people are much poorer than urban people. Asia has too many farmers. For many of today's rural poor, the long-term route out of poverty leads out of agriculture altogether.
4. Especially in food importing countries, it is easy to blame cheap food imports for rural poverty. Protecting agricultural producers from cheap imports thus seems a feasible way of helping poor farmers.
5. Several Asian countries have moved from the taxation of agriculture, relative to the manufacturing and other traded good sectors, that Krueger, Schiff and Valdes identified in a well known study in the early 1980s,[1] to net protection of agriculture.
6. Agricultural protection using NTBs or tariffs on imports, raises producer prices and consumer prices of agricultural products, but on balance this does not help the poor — urban or rural.
   - It slows down the economy-wide rate of growth and the rate at which the demand for labour is growing
   - The main beneficiaries of producer price increases are large land-owners and agricultural processors, not small farmers.
   - The main losers from increases in the consumer prices of agricultural goods are the poor — urban and rural.

[1] For a summary of the main findings of this study see Schiff and Valdes (1992).

7. An alternative to protecting agriculture with NTBs or higher tariffs on imports, is to subsidise agricultural inputs. This policy provides protection while benefiting poor farmers and avoiding price increases for low income consumers. But:
   - It also reduces the economy-wide rate of economic growth
   - It introduces distortions and inefficiencies into the subsidised input markets
   - It has fiscal costs which subtract from governments' ability to finance typically underfunded programs which directly benefit low income rural and urban groups. Eventually the fiscal costs become unacceptably large to most governments , and at some point the use of tariffs and/or non tariff barriers become politically more acceptable options
   - Although small low income farmers may benefit to some extent from the input subsidies, the principal beneficiaries are relatively prosperous agricultural producers and landowners.

In the second part of the chapter we argue that the experience of the north east and south east Asian countries has lessons for India. We draw on a new study of agricultural protection (Pursell et al., 2009) which shows that despite past and continuing interventionist and protectionist formal trade policies in agriculture, the actual Indian experience as measured by relative price levels, strongly discriminated against agriculture in the past. However during the 1980s and 1990s anti-agricultural bias declined and during the 2000s there has been approximate neutrality viz a viz the other tradeable sectors: that is manufacturing, mining and the tradeable component of services. But high redundant agricultural tariffs and continuing propensities to intervene raise the possibility that in the future India might follow an agricultural protectionist path of the kind traversed in earlier years by the Northeast Asian countries such as Japan and Korea, with negative consequences for economic growth and for India's poor.

12.1 Agricultural Protection and Rural Poverty in Asia

Rural Poverty in the Context of Structural Change

As economies grow, agriculture's share of national output shrinks. The process is inexorable - the faster the growth, the faster this realignment of the economy.[2] A central reason for the structural change, though not the only one, lies on the demand side. As people become richer they spend a smaller proportion of their incomes on food and an increasing proportion on manufactured goods and on services. Although this produces problems, the combined process of growth and structural transformation raises average incomes and generates a better life for the vast majority of people.

As a consequence, the share of agricultural employment in the total workforce also contracts, as agricultural workers and farmers leave the countryside for better opportunities elsewhere. But the relocation of workers occurs more slowly than the change in the composition of national output. In rapidly growing Asia, this is reflected in the fact that agriculture constitutes a declining proportion of national income, but a much higher proportion of total employment. In the Philippines, for example, agriculture's share of GDP is currently about 15 per cent while its share of employment is at least three times that.

This disparity between the changing structure of output and the resulting readjustment of employment has an obvious consequence. Incomes in agriculture are lower than incomes elsewhere. People don't leave the declining sector, agriculture, quickly enough to avoid the outcome that income per person in agriculture declines relative to income in manufacturing and services. At any one time, there are just too many farmers and farm

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[2] For more on this, see Timmer (1988).

workers. The outcome is genuine economic hardship for rural people. Low average agricultural incomes and rural wages are the means by which a market economy compels rural people to look for opportunities outside farming.

The more slowly people leave agriculture compared with the overall rate of economic growth, the worse this impoverishment becomes. In Thailand, according to the official poverty measure, 93 per cent of all poor people reside in rural areas. This is a feature of all rapidly growing economies with substantial rural populations. In China today, it is a tremendous social problem. In the long run, this process sorts itself out, as the rural population gradually declines. But as John Maynard Keynes pointed out, in the long run we are all dead. One might add that truly poor people will be dead sooner than others. In the meantime, millions of people, trapped in rural poverty, continue to suffer.

In food importing countries it seems natural to blame imported agricultural products for the rural malaise. Restricting these imports through protectionist trade policies seems sensible. Alternatively, or in addition, farm subsidies of various kinds may be used to help farmers and processors to compete with imports. In food exporting countries, input and/or export subsidies may be used to help agricultural exports in world markets. In large diversified agricultural economies such as Indonesia and India, it may seem natural to help out the agricultural sector in both ways, by protecting import competing industries with tariffs or QRs, paying export subsidies to industries with exportable surpluses, and providing input and similar subsidies to both. But these reactions misunderstand the main causes of rural poverty, and more to the point, for the reasons summarised below, they don’t work.

Agricultural Protectionism Reduces the Overall Rate of Economic Growth

The manufacturing sectors of nearly all the Asian countries are now export oriented, open to imports over low tariffs, and the domestic prices of most manufactured goods are for the most part about equal to or below prevailing world prices. This is broadly true of all the major Asian economies in North and South East Asia (including China) and of India and Sri Lanka in South Asia. The principal exceptions are Bangladesh and to a lesser extent Pakistan.[3] There has also been an expansion of export oriented service sectors — especially IT and service outsourcing — which are basically operating under free trade conditions. Getting under way at different times over the past 40 to 50 years and earlier in Japan, the rapid expansion of manufactured exports and more recently of service exports, have been major drivers of fast economic growth in these economies. Over the past 10 years or so this process took hold in India where it has now developed considerable momentum. In the countries in which fast economic growth started earlier there were long periods of rapidly improving living standards including dramatic reductions in rural poverty, and the same process is now under way in the more recent rapid developers, notably China.

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[3] Bangladesh has a large export oriented garment export sector, but heavily protects its domestic import-substitution manufacturing industries. There was a period of import liberalization which started in the late 1980s and continued into the mid 1990s, but since about 1997 manufacturing protection has increased with the use of a variety of para-tariffs on top of Customs duties. Pakistan liberalized its manufacturing import policies and cut tariffs during the late 1980s and the 1990s, but this process slowed and eventually stopped during the 2000s. In addition, Pakistan still retains a ‘positive list’ of permissible imports from India, which bans the import of a wide range of Indian manufactured products which would otherwise be supplied by India’s much larger and more diverse manufacturing sector. India has similar but not explicit restrictions on imports from Pakistan, but the potential imports from Pakistan that are consequently blocked are probably very small relative to India’s manufacturing economy. Both Bangladesh and Pakistan have made sure that SAFTA has not significantly opened up imports from India. For more on this see World Bank (2004) and World Bank (2006).

Some of the earlier rapidly developing countries — especially Japan and Korea — followed protectionist agricultural policies and these policies slowed their overall rate of economic growth, and therefore also slowed the rate at which low wage labour was pulled out of their agricultural sectors and hence the rate at which rural poverty declined. As with any form of protection, the protected sector-in this case agriculture — was favoured over the manufacturing sectors, which were broadly and approximately (relative to agriculture) operating under free trade conditions with low or minimal protection and subsidies.[4] The national resources which shifted to or were retained in agriculture, were less efficiently employed in the protected parts of agriculture than in the unprotected or less protected parts of manufacturing in which they would otherwise have been employed. The consequent brake that such policies apply to the rate of economic growth is more marked in the early stages of economic development when agriculture typically constitutes a higher proportion of GDP, than in the later stages of development when agriculture's share of GDP declines, so that the size of the efficiency and income-reducing distortion also declines relative to GDP.

Agricultural protection and subsidy policies act by both drawing resources into new high-cost areas of the agricultural economy (for example into new crops and other rural products, or into higher-cost marginal segments of existing sectors) or perhaps more important when the overall economy is growing rapidly, by keeping resources in areas of agriculture which would otherwise move to more productive service or manufacturing activities. The resources that move to or are retained in agriculture include private resources — farmer savings, farm household labour, rural landless labour, and the capital and labour used to provide farm inputs and services but also government resources supplying supportive public infrastructure such as roads, electricity, dams and communication facilities.

Unlike privately supplied farm inputs or services, the public resources are not supplied in direct response to market forces but as a result of political or bureaucratic processes in which the larger and more prosperous farmer and other beneficiaries of the agricultural protection policies are typically especially influential. The scale of the public resources affected in this way could be small or large and depends on many factors, including the local, regional and national lobbying power of the farmers and other beneficiaries of the protection policies. Like the private resources, however, the public resources have an opportunity cost, including the likelihood that they come from, or would otherwise go to, more productive sectors of the economy including more productive uses within the rural economy.

Large Landowners and Agricultural Protection: An Example from Indonesia

Protectionist agricultural policies not only, reduce the economy-wide rate of economic growth, their principal beneficiaries are typically large landowners.

Recent events in Indonesia illustrate this point. Indonesia is a staple food importing country. Rice, by far the most important food source, was a major import until 2000 and Indonesia was the world's largest rice importer. But in that year, imports were banned.

4 In both Japan and Korea 'infant industry' protection policies were used in the early development of some (but by no means all) manufacturing industries. But these policies were applied selectively and generally speaking rigorously, in the sense that the initial protection was soon removed and did not become a smokescreen for long term, debilitating protection of quasi-permanent infants, as was the case in South Asia. Especially in Korea, this was done by requiring manufacturing firms to sell increasing shares of their output either directly in export markets, or in the duty and import-restriction free domestic markets in which direct exporters purchased their inputs.

The ban remains in place today, despite some smuggling and occasional exemptions apparently granted to influential importers.

The import ban was supported by the Indonesian Ministry of Agriculture and *Bulog*, a government institution charged with managing food policy. These agencies claimed that the import ban would assist poor farmers by raising the price of rice. Since the ban was imposed, rice prices have indeed increased, relative to other prices, by at least 35 per cent.

In a recent study, Warr (2005) analysed the economic effects of Indonesia's rice import ban using a detailed general equilibrium model of the Indonesian economy. The analysis treated the policy as a 90 per cent reduction in the quantity of imports before the ban, in the year 2000. The analysis finds that large landowners are the only major socio-economic group to benefit significantly from the import ban, whether they reside in rural or urban areas. Small farmers, landless rural workers and the urban poor either gain next to nothing or lose heavily. The incidence of poverty actually increases by about 1% of the population as a result of the ban.

The reason that rich farmers gain the most is elementary. The benefit a producer obtains from a price increase depends on the amount of produce he has to sell. The larger the output, the larger is the benefit. Most of the benefit goes to large producers who own the most land. Smallholders both produce and consume rice. Truly small farmers grow staple crops mainly for their own consumption. Their marketed output may be quite small or nil and they receive correspondingly little or no net benefit from a price increase. Landless employees of rice farmers only lose. They receive no direct benefit from the price increase unless their wages increase as a result. According to the model simulations, their wages do not rise because the market for unskilled labor is so competitive. But the price of the rice they eat goes up and their real income falls. The same outcome applies to poor urban consumers. This model analysis has one clear implication — if the government really wants to help poor farmers, a policy which operates through the prices of agricultural products is a very blunt instrument indeed.

Processors and Agricultural Protection

It is obvious that rich landowners benefit from a price increase. But food processors are likely to benefit as well. In Indonesia, protection is even more of a boon for rice millers than large farmers, first through the increase in the price, and secondly as a result of the increase in the supply of paddy which comes to them for milling. They will benefit in both these ways even if the increase in the price of milled rice is fully passed through to the price they pay for paddy. For example, if the milled rice price goes up by 30 per cent, and the derived increase in the price of paddy is also 30 per cent, the gross milling margin also increases by 30 per cent. But many factors affect the derived increase in the price of paddy, including especially the competitiveness of the rice milling industry. If the rice millers have market power, the price of paddy may rise proportionately less than the price of milled rice, in which case there is a further benefit to the millers, at the expense of both large and small paddy cultivators. In Indonesia, the pass-through of increases in milled rice prices is reported to be imperfect, resulting in windfall gains, especially for large scale millers. Not surprisingly, these firms are influential members of the lobbies pressing for protection against imported rice.

Indonesia's recent and current rice policies suggest that keeping out imports as a way of 'protecting ' poor rural people is futile. Other special interests, especially large landowners and agricultural processors, are frequently the principal beneficiaries. These groups are often behind the lobbyists pressing for protection, using assistance to poor farmers as a smoke screen for policies designed to benefit themselves and which actually

on balance harm the poor, rural and urban. Well-meaning non-governmental organisations all too often play into their hands, albeit unwittingly.

Food Security and the Poor

Another motive for agricultural protection has nothing to do with assisting farmers, rich or poor. Indonesia provides a good illustration. Indonesia's policy makers have long sought 'food security,' by which in relation to trade policies, they mean[5] (a) less dependence on imports (b) reduced vulnerability to possible breakdowns in supplies from other countries (c) insulation of the domestic market from the large price fluctuations which occur in world agricultural markets. These objectives are closely linked to Indonesian nationalism. Food security is seldom mentioned in food exporting countries like Thailand, because adequate supplies for domestic consumers can be assured by exporting less, and varying export taxes can be used to ensure reasonably stable domestic prices. But net food importers like Indonesia, Laos, South Korea and Japan, regularly offer food security as a reason for restricting imports.

However, what many Asian politicians understand by 'food security' — reduced imports — is achieved through protection policy only by *raising* the price of food. This price increase reduces imports because it induces a reduction in consumption and an increase in domestic production. The effect is mainly on the former because the supply response of domestic staple food production to a price increase is known to be quite small. A price increase reduces imports mainly by reducing consumption. This translates into *less*, not more, food security for millions of poor people.

The negative effect of a food price increase is concentrated on poor, rather than rich, consumers. As income rises, the proportion spent on staple foods declines. The poorest people may spend half or more of their income on staple foods alone. For the rich, the proportion is a small fraction of that. When prices rise, rich consumers can afford to maintain their consumption levels. The poor do not have this luxury because staple foods are a major expenditure. As the price rises, they *must* contract their total consumption correspondingly because the original pattern of consumption is no longer affordable, and this will almost always mean spending less on food. Unless food subsidies are provided, the protection of agriculture can mean hunger for large numbers of poor people and thus may reduce their 'food security' understood as access to an adequate minimum diet.

What Does Work?

What policies do assist poor rural people? Effective policies exist, but they are not cheap. The over-riding point is that the process of structural change must be recognised. To resist it, and to attempt to hold people in agricultural production, is to condemn large numbers of rural people to protracted economic hardship. Asia has too many farmers. Rural people, especially the young, must be assisted in finding better opportunities outside agriculture, and for many this means leaving rural areas altogether. Education policy is the key. If young rural people do not receive a quality education, they will be condemned to life at the bottom of the economic ladder. Sadly, throughout Asia, rural education is of poor quality and is given few resources. It is not surprising that the dropout rates in rural schools are high, especially at the secondary level. Because it is of

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5 In relation to domestic policies 'food security' has a much broader meaning and includes especially policies and institutions for ensuring that minimum adequate food supplies are distributed to individuals and groups affected by short or long term unemployment, droughts, political turmoil etc .

poor quality, the education provided in rural secondary schools is seen to be of limited value.[6]

Recently released data from Thailand clearly show the relationship between poverty and education. According to the National Economic and Social Development Board, of the total number of poor people in 2002, 94.7 per cent had received only primary education or less. A further 2.8 per cent had lower secondary education, 1.7 per cent had upper secondary, 0.48 per cent had vocational qualifications and 0.31 per cent had graduated from universities. Thailand's poor are overwhelmingly uneducated. They also tend to be rural and living in large families. But they are not necessarily landless.

A further policy direction is to raise the low levels of agricultural productivity.[7] This means investing in agricultural research, which is badly under-funded throughout Asia; improved water management; and plant and animal disease mitigation.[8] In some poorer countries of Asia, inadequate basic rural infrastructure, especially roads, is a serious impediment to raising productivity Laos and Cambodia are good examples. These countries have recently reformed earlier restrictions on market participation for rural people. But when roads are so poor that markets cannot be accessed, the value of these reforms is greatly diminished. In the sad case of Myanmar, these failings are compounded by the continued suppression of rural markets and the prohibitive taxation of agricultural exports, blocking any chance of raising agricultural productivity through market-based development.[9]

Finally, while foreign direct investment in agricultural production itself is minor, foreign investment in agricultural processing and distribution can be quite important. It is capable of raising international competitiveness of domestically produced processed agricultural products, employing large numbers of poor rural people and raising the demand for the raw agricultural products themselves. The mechanism through which this happens is often improving compliance with internationally accepted food safety standards.[10]

12.2 Agricultural Trade Policies and Rural Poverty in India[11]

Structural Change, Trade and Domestic Policies

Comparing India's agriculture with the agricultural sectors of the north-east and south-east Asian countries, both similarities and some striking differences are apparent.

One basic difference is that — except for China — India's agriculture sector is far larger than the agricultural sectors of these countries. It is the second largest agricultural economy in the world after China's: at purchasing power parity exchange rates it is roughly four and a half times the size of the US agricultural economy.[12] Again with the sole exception of China, it is also much more diversified than other agricultural economies, producing just about every known agricultural and livestock product under many different agronomic conditions.

Another difference with most other Asian countries, is that India's agricultural trade (in the broad sense including livestock and fish products) has always been very small

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[6] For a detailed discussion in the context of Thailand, see Khoman (2005).
[7] The classic study on this subject is still Schultz (1964).
[8] A recent discussion of these and other reforms that are typically needed in the rural areas of developing countries is in the World Bank's 2008 World Development Report on agriculture. World Bank (2007).
[9] For a fuller discussion in the context of Burma/Myanmar see Warr (2000).
[10] On this, see Athukorala and Jayasuriya (2003).
[11] Much of this section relies on Pursell, Gulati and Gupta (2009).
[12] For comparative indicators of national agricultural sectors, see World Bank (2007), Appendix Tables.

relative to the value of total agricultural production. In l960/61 agricultural imports and exports were each valued at just above 3 per cent of total production. In 2003/04 agricultural imports were only 0.6 per cent of production and 2.4 per cent with edible oil imports included, and exports were 5.7 per cent of production. Mainly reflecting seasonal conditions and adjustments in domestic policies, by world standards fairly large quantities of wheat and sugar are imported from time to time, and there are sometimes substantial exports of common rice. But the quantities involved are normally quite small in relation to the total Indian production of each of these commodities. The very small share of agricultural trade in the agricultural economy is predominantly due to the latter's size and diversity, but also to trade and domestic policies which have consistently aimed for national self sufficiency. About the only important product group for which this objective has not been achieved is edible oils. Imports of edible oils (mainly palm oil and soya oil) expanded rapidly through the 1970s and early 1980s despite high tariffs, and imports now account for about 40 per cent of total edible oil consumption.

As in other Asian countries, over time India's manufactured exports have accounted for increasing proportions of its total merchandise exports, growing from about 40 to 50 per cent during the 1950s and 1960s to between 70 and 80 per cent since the late 1980s. Correspondingly, the share of agricultural exports has declined, from just under half during the 1950s and 1960s to about 10 per cent in recent years. During the early years agricultural imports were about a quarter of total imports, but this share has now dropped to around 3 per cent. However India is still a net agricultural exporter. The exports include fish and fish products, oil cakes, cashew kernels, tea, coffee, tobacco, spices, fruit and vegetables, pulses, basmati rice and from time to time substantial quantities of sugar and common rice. India is a medium to large player in the world markets for these products, even though in most cases exports only account for quite small shares of total production.

During the past 50 years, India's agricultural sector has declined in relation to the rest of the economy, but until recently at a much slower rate than in the earlier fast developers in Asia. During the early 1950s, India's agriculture and livestock sectors accounted for about 57 per cent of GDP. Half a century later, the corresponding proportion was about 23 per cent. Most of the decline occurred in the crops sector, which contracted from about half of GDP to 15.5 per cent. The remaining 8 per cent is mainly accounted for by the livestock (including dairying) and fruit and vegetable sectors. Both of these have been growing considerably faster than the crop sector.

The long run decline in agriculture's share of the economy is mainly due to the growth of services, which have increased since the 1950s from about 30 to 60 per cent of GDP. Manufacturing's share of GDP increased only slightly over this half century, from about 10 per cent at Independence to a little under 16 per cent in 2003/04. Until about 2003/04, the story of manufacturing within the Indian economy is thus very different from the experience of the rapid developers in north east and south east Asia, where manufacturing's growth rate and share in GDP increased much faster than in India. Since about 2003/04, however, the Indian manufacturing growth rate appears to have accelerated.

As has been the case in the other Asian countries at a similar stage of their economic development, the share of agricultural employment in total employment in India is much higher than the share of agriculture in GDP. In 2003/04 about 60 per cent of total employment was in agriculture, even though, as noted above, the agricultural sector only accounted for approximately 23 per cent of GDP. Only a moderate decline in agriculture's employment share had occurred since the 1950s. The decline which did occur was mainly due to the growth of services. During the early protectionist 'licence Raj' period, before the Rupee devaluations of the late 1980s and the liberalising economic policy reforms of the early 1990s, manufacturing had contributed little to

employment growth because of its capital intensive and inward-looking structure, and because of domestic controls which severely constrained its expansion and modernisation. During the 1990s up to about 2003/04, there was a prolonged period of restructuring and adaptation to more open and competitive conditions, during which manufacturing employment growth was also quite low.[13] Only since about 2003/04 were there signs that faster manufacturing sector growth was being accompanied by rapidly growing demand for labour.

As in the early stages of economic growth in the Asian rapid developers, in India expenditure on food is a high proportion of Indian household budgets. In 2003/04 the average share was approximately 54 per cent in rural areas and 42 per cent in urban areas. Among poor households this share was much higher. For the poorest 10 per cent of the rural population it was 62 per cent and 58 per cent for the corresponding poorest 10 per cent of the urban population. In India, most poor people live in rural areas. In 1999/2000 rural people accounted for approximately three quarters[14] of the total population estimated to be living at standards below the poverty line that is used in regular Indian government surveys.

In three key respects therefore, rural poverty in India corresponds to, and if anything is more extreme, than the general situation in the north east and south east Asian developing countries such as Indonesia. Firstly, a very high proportion of the working age population (about 60 per cent) relies for employment on a sector of the economy which generates a much smaller share (about 23 per cent) of national income. Secondly, most people living in poverty are in rural areas. Thirdly, there is extreme vulnerability of the poorest consumer groups to increases in food prices.

For these reasons, food prices are, not surprisingly, a sensitive political issue in India and –in contrast to most other Asian countries-for many years the government has intervened extensively in food markets to ensure the supply of basic foodstuffs at affordable prices to the poorest segments of the population. In 1958 this led to the establishment of the public distribution system (PDS). Under the PDS basic foodstuffs are sold at subsidised prices through ‘fair price’ shops. For most of its history the PDS sold wheat, rice, sugar and edible oils.[15] Every Indian citizen receives ration cards which entitle them to receive specified quantities of subsidised foodstuffs through this system. In 1997 the system was amended to distinguish between ‘above poverty line’ (APL) and ‘below poverty line’ (BPL) households. The BPL households are entitled to higher rates of subsidy. In 2001 edible oils were removed from the list of eligible commodities and from 2002 sugar has been available at subsidised prices only to BPL households. Currently, the main function of the PDS is to sell wheat and rice though approximately 460,000 ‘fair price’ shops to BPL households. The value of the food subsidies is about 0.8 per cent of GDP.

Despite extensive land reforms during the first 20 or so years following Independence, and continuing upper limits on individual ownership of agricultural land, farm wealth is very unevenly distributed. An imperfect but suggestive indication is given by government statistics on operational land holdings.[16] In 2000/01, for example, 21.9

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[13] For more on India’s manufacturing policies see Chapter 7 of this book.

[14] Estimated from World Bank (2007), Appendix Tables

[15] The PDS also provides subsidized kerosene for cooking

[16] The size distribution of operational holdings is a highly imperfect indication of the distribution of rural wealth for many obvious reasons. The latter is affected by the extent to which land is leased in and out, the level of the rental payments, land quality (rainfall, irrigation etc), type of crop or livestock activity it supports etc. An early discussion of these issues is in Chapter 5 (by S.K. Sanyal) in Srinivasan and Bardhan (eds), 1988.

million larger operational holdings exceeding 2 hectares accounted for 61 per cent of the total area operated, whereas 98.9 million operational holdings of less than 2 hectares accounted for only 39 per cent of the total area operated. The average size of 76.1 million operational holdings described as ‘marginal’ (less than 1 hectare) was only 0.4 hectares, whereas the average size of 1.2 million holdings described as ‘large’ (> 10 hectares) was 17.2 hectares.[17] Hence, in India as in other Asian countries, most of the benefits of government interventions that increase agricultural protection and subsidies go to larger farmers and larger land owners.

In India, high proportions of some of the major agricultural products are still consumed directly by the farm families that produce them: in particular rice, wheat, coarse cereals (such as maize, millets and sorghum), some fruits and vegetables, and milk (Table 12.1). As in other Asian countries, relative to their production, small scale producers have the highest own consumption ratios and the smallest marketable surpluses. They therefore benefit proportionately less from price increases than larger producers. On the other hand (unless there are associated supply disruptions which disproportionately affect small producers) subsidised prices for inputs like fertilisers and electricity benefit small producers on their total production, whether it is consumed by the farm household or sold. For this reason and also because consumer food prices are not directly affected, it is often argued in India that extra farm protection is best provided by input subsidies rather than by measures such as tariff increases, since small farmers benefit more and low income consumers are not hurt.

Table 12.1: Approximate % Shares of Indian Farm Production Consumed at the Farm in 2004/05

Rice	29
Wheat	37
5 coarse grain cereals	38
5 pulses	16
7 oilseeds	8
Onions	17
Potatoes	15
Sugar cane	2
Cotton	5
Jute	9
Milk	46

Sources & notes: On farm consumption includes uses of seeds for planting. Percentage of Agricultural products calculated from marketed surplus percentages given in the website of the Agricultural Census Division, Ministry of Agriculture, Delhi. Estimated farmer consumption of milk is from National Dairy Association (2007).

Unlike most other Asian countries, under a law passed in 1955, known as the Essential Commodities Act (ECA) the Indian central government has retained very sweeping powers to regulate just about every aspect of the processing and distribution of most foods. Over the past 15–20 years many ECA regulations have been lifted, but the basic power to intervene remains in place and is periodically employed, sometimes in quite draconian ways:for example in January 1999, when ECA was applied to sugar importers, effectively introducing an import licensing system through the application of a domestic

[17] Summarised from the website of the Agricultural Census Division, Ministry of Agriculture, New Delhi.

regulation.[18] As do its high redundant tariffs (see below) the continuing existence of ECA makes it easy for the central government, if it decides to do so, to intervene and control domestic agricultural markets.

India's Agricultural Trade Policies

As documented in many studies,[19] India has a long history of highly protectionist trade policies in agriculture. During the 1960s, 1970s and 1980s the agricultural sector was comprehensively protected against import competition by the import licensing system, parastatal and other government mandated import monopolies, prohibitively high tariffs, and important agricultural commodities such as rice and cotton were disconnected from export markets by export controls. Fertiliser production, imports and distribution were subject to detailed controls, and both producers and farmers were subsidised. Agriculture's principal non-traded inputs-canal water, electricity and credit-were also heavily subsidised. In the Uruguay Round India bound most of its agricultural tariffs at prohibitive levels of 100 or 150 per cent. Despite signing the AOA in 1995, India continued to apply its import licensing system to agricultural products for another 6 years, on the grounds that these products were consumer goods that it had protected in this way for many years under the GATT/WTO balance of payments provision. Following a challenge to this position at the WTO by the US, the EU and other countries, India was finally obliged to drop this position and phased out these restrictions over a three year period starting in 1998/99. However, the agricultural products on these lists were the last to be dropped, in April 2001 and the reform has in practice made very little difference to the general stance of India's agricultural trade policies, which continue to be highly protectionist and interventionist. This has been possible while complying with the letter of the AOA rules, though the use of State Trading Enterprises to control imports of some major commodities (notable rice and wheat), by setting applied agricultural tariffs at whatever level below their very high bound levels is needed to block imports, and by disposing of periodic surplus supplies of some commodities (notably rice, wheat and sugar) with the use of export subsidies that India considers are justified under various WTO loopholes. In addition India has continued its major input subsidy programs, which it argues easily fit within AOA guidelines, and as noted above has retained comprehensive powers to intervene in agricultural markets under ECA.

Despite agriculture's comprehensive protection against import competition that has been in place for fifty or so years, most domestic agricultural prices have been *either below or about equal to* approximate average import prices after adjusting for port and domestic transport and handling costs. This situation of redundant unused agricultural protection is still continuing during the 2000s. The extent of this tariff (and in some cases QR) redundancy is indicated in Table 12.2. For example, on average during 2002/03, 2003/04 and 2004/05, the domestic prices of 13 products or product groups were lower than estimated import reference prices (that is cif prices plus port, handling and domestic transport charges), while the tariffs which would have applied to the same products if they had been imported varied from 30 to 100 per cent. However, even though domestic prices of these products were lower than import reference prices, most *exceeded export reference prices*,(that is fob prices after deducting domestic transport, handling and port

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[18] Explicit licensing or other non-tariff barriers to imports are not allowed under the WTO Agreement on Agriculture.

[19] For example in Gulati, Hanson and Pursell (1990), Gulati and Kelley (1999), World Bank (2004), Mullen, Orden and Gulati (2005). A recent extension and update with references to the literature on this topic is in Pursell, Gulati and Gupta (2009).

costs).[20] This situation of non-tradability, where domestic prices are situated within the often large gap between import and export reference prices, has also frequently occurred in the past.[21]

Long Run Trends in Implicit Agricultural Protection

In a forthcoming study Pursell et al. (2009) have extended previous estimates of implicit protection of Indian agriculture to cover the 40 years 1964/65 to 2004/05. One of the aggregated series in this study is for 11 major crops: common (non-basmati) rice, wheat, maize, sorghum, chickpea (representing pulses), groundnut, rape (mustard) seed, soybean, sunflower seed, sugar and seed cotton. Together, these 11 crops currently account for about 44 per cent of the total value of Indian primary agricultural production. The study also includes times series estimates for two other large agricultural sub-sectors, fruit and vegetables and milk, but including these does not change the broad major conclusions.

For the crop subsector, during the first decade of this period rice accounted for more than half of the value of this sample of agricultural commodities. By 2005 this share had declined to about one third. Over the same period the share of wheat increased from 12 per cent to 27 per cent. The basic calculations compare domestic prices and 'world reference prices'. The latter may be understood as estimates of what domestic prices *would be* if the same products were either imported duty free and were competing with domestic production, or if the domestic products were exported without being subject to export controls, export taxes, or export subsidies.[22] Three price series are compared:

(1) The domestic price in rupees deflated by the India wholesale price index.
(2) The world reference price in rupees, calculated at the official exchange rate, similarly deflated.
(3) The domestic price adjusted for the value of input subsidies.

The nominal rate of assistance (NRA) is given by the difference between (1) and (2) divided by (2). The direct rate of assistance (DRA) is calculated as the difference between (3) and (2) divided by (2). In the case of commodity aggregates, commodity values are added using shares reflecting the value of production of each commodity at reference prices.

For rice, the data indicate a steady decline-in all about 35 per cent in the real domestic price from the mid-1960s until about 1987/88. This reflected the impact of 'green revolution' technologies over this period and the insulation of the domestic market from world markets. After 1987/88 this decline was reversed and by 1999/2000 real prices were back at about the same level as they had been in the 1960s. From then real prices trended down again, and in 2004/05 were about a quarter lower than in the mid 1960s. Over the whole period, however, the real domestic price was much more stable than the world price, notably during the commodity boom period of the early to mid 1970s.

[20] In the agricultural trade literature import and export reference prices are also called import and export parity prices

[21] As a result of the surge in world commodity prices in 2007 and 2008, export reference prices of many Indian agricultural products-including foodgrains and dairy products-went well above Indian domestic prices. Domestic prices were kept down by newly imposed export restrictions.

[22] More on the details of these calculations is in Pursell, Gulati and Gupta (2009) and in the references given there.

Table 12.2: India: Some Comparisons of Estimated Implicit Nominal Protection Rates with NTBs and Tariffs

	% share of total agricultural & livestock production 2002/03	Period of price comparisons	Est nominal protection % difference, domestic price over		NTB 2004/05 ?	Tariff 2004/05 %	WTO binding %
			Import reference price	Export reference price			
Rice (common)	10.7	TE 2004/05	-23	12	STE	70 / 80	70/80
Wheat	7.3	TE 2004/05	-27	31	STE	50	80/100
Sorghum	0.8	TE 2004/05	-8	75	STE	50	80
Maize	1.0	TE 2004/05	-16	40	STE & TRQ	50	60
Pulses	2.8	TE 2004/05	-2	n.a.	No	30	100
Groundnuts	1.8	TE 2004/05	-21	21	No	30	100
Rape/mustard seeds	1.0	TE 2004/05	20	n.a.	No	30	100
Soya beans	0.3	TE 2004/05	-33	n.a.	No	30	100
Sunflower seeds	1.0	TE 2004/05	-5	n.a.	No	30	100
Sugar	4.9	TE 2004/05	15	57	ECA	60	150
Cotton	1.5	TE 2004/05	-17	8	No	10	Unbound
6 fresh fruits & 7 fresh vegetables	16.4	TE 2004/05	-53	-11	No	30/40/50	Most 100
2 spices (chillies/ peppers & ginger)	1.1	2002/03	-10	0	No	70/30	100/150
Garlic	0.2	2002/03	70	n.a.	No	100	100
Tea	0.7	2002/03	-10	0	No	100	100/150
Coffee	0.3	2002/03	-10	0	No	100	100/150
Raw milk	18.6	TE 2004/05	21	n.a.	TRQ	60/40	60/40
Poultry meat	2.1	2002/03	55	n.a.	No	30/100	35/100
Subtotal	72.6						
All other	27.4		n.a.				
TOTAL	100						

Notes: (1) The shares of agricultural production are from the national accounts statistics. The shares shown for common (non-basmati) rice, sugar, cotton and milk are for the corresponding non traded farm products i.e. paddy, sugar cane, seed cotton, and raw milk, whereas the NTBs and tariffs shown apply to the traded products.

(2) TE=triennium unweighted averages ending in the year indicated

(3) STE=a State Trading Enterprise import monopoly exists

(4) TRQ means there was a tariff rate quota at a lower tariff than that indicated

(5) ECA=Essential Commodities Act controls were applied to sugar importers

(6) Tariffs and tariff binding rates separated by a slash mean that the indicated tariffs apply to different types or varieties included in the product group e.g. most fruit tariffs were 30% but the apple tariff was 50%.

(7) In the NTB column, no account has been taken of SPS and TBT rules that agricultural and food imports are required to satisfy

(8) The WTO bindings for rice were originally zero. They were negotiated up to 70 and 80 percent after the Uruguay Round was concluded

(9) In the case of poultry the nominal protection rate is based on a comparison of poultry prices in Pakistan assuming that trade across the land border (at present not allowed) would be possible. The estimated poulty nominal protection rate would be considerably lower if based on trade through Pakistan's and India's sea ports.

(10) As milk is not traded internationally, the nominal protection estimate for raw milk was calculated by estimating the cost of combining duty free imported skim milk powder and butter oil to produce reconsituted milk. The tariffs shown are respecitively for skimmed milk powder and butter oil.

(11) The information on NTB status and tariffs is from Goyal, Easy Reference Customs Tariff, 2004/05 edition.

(12) Most of the NTBs, tariffs and WTO bindings indicated in this table were the same in 2007/08. However there have been changes in estimated nominal protection rates due to changes in domestic prices relative to world prices. One major change in 2007/08 was that world dairy prices went well above Indian domestic prices.

Except for 3 years (1964/65, 1985/86, and 1986/87) until 1999/2000 domestic prices of rice were below the estimated export reference price. This was accomplished by a *de facto* export ban. In the absence of this restriction, rice would have been exported and the domestic price would have been higher. If the value of the rice input subsidies are included (a calculation that is possible only from 1984/85 onwards) the (adjusted) domestic price was about equal to the import reference price from about 1999/2000. The conclusion is that until about 1999 Indian rice production was taxed, but that there was neither a net tax or subsidy after 1999/2000 up to 2003/04.[23]

The Pursell et al study also shows the results of a similar calculation for an aggregate of the 10 other crops listed above, including wheat, but this time just comparing the aggregate domestic price with the import reference price, The comparison shows that:

(1) There was an even larger decline in the real price of this set of commodities than occurred for rice, but the decline again finished in 1987/88. This dramatic downward trend was dominated by a decline in the real price of wheat of approximately 51 per cent. After 1987/88, there was no pronounced upward or downward trend in the aggregate real price of this commodity bundle. The downward trend in the earlier period reflected the increased productivity that resulted from the green revolution, and was a major contributor to the economic welfare of both farmers and consumers.

(2) As with rice, the domestic price of this commodity bundle has been much more stable than world prices.

(3) Domestic prices were below world import reference prices for most of the period shown except between 1964/65 to 1972/73 and briefly in the mid-1980s.

(4) When the value of input subsidies is included, the domestic price was about equal to the world import reference price between 1999/2000 and 2004/05

(5) The conclusion is that between 1964/65 and 1972/73 this group of 10 commodities was protected, then taxed between 1973/74 and 1997/98, and since 1998/99, after allowing for the input subsidies, neither taxed nor subsidised in relation to world import reference prices

Agriculture Versus Manufacturing: Long Run Trends in Relative Protection

At an economy-wide level, differences in protection between sectors determine the allocation of resources and not absolute levels of protection. This section compares long run trends in nominal agricultural protection with estimates of long run trends in nominal manufacturing protection. Both series show implicit protection estimates based on comparisons of domestic and world reference prices. How the manufacturing protection time series has been estimated is described in detail in Chapter 7 in this book by Pursell, Kishor and Gupta. As discussed there, for many years until import licensing was finally removed in April 2001, Indian manufacturing was protected against import competition by a combination of import licensing and prohibitive tariffs. During this period implicit nominal protection (that is the relation between actual ex-factory prices of final products and import reference prices) had little or no relation to tariffs. After 2001 most manufacturing tariffs were still prohibitive, and only eventually became binding and reasonably good predictors of implicit protection rates from about 2006/07.

[23] It should be noted, however, that in these calculations the reference prices does not allow for the likelihood that if the rice export ban had been lifted, world prices for rice would have been lower. Indian rice production is about four times the volume of world international trade in rice. Even if a small proportion of this output had been exported, there would have been a significant reduction in the world price.[23] Substantial subsidised exports of rice did occur between 2000 and 2004, and it is likely that they depressed world prices.

Figure 12.3 compares an aggregate agricultural nominal rate of assistance (NRA)[24] series for the 11 crops discussed above for the period 1964/65 to 2004/05, with an equivalently defined aggregate NRA series for manufacturing covering the period 1970/71 to 2004/05. The agricultural series is then supplemented by a direct rate of assistance (DRA)[25] series which includes estimates of the value of the agricultural input subsidies which are available starting in 1984/85. Several major points emerge from these comparisons:

(1) Until 1999 the relative protection rates strongly favored manufacturing over crop agriculture. Anti-agricultural bias was particularly marked during the 1970s up to the mid-1980s, but continued in a significant but somewhat less marked way until about 2000. This finding confirms that India also belonged during this period to the general finding of the multi-country study by Krueger, Schiff and Valdes,[26] which documented strong anti-agricultural bias in the incentive systems of many developing countries.

(2) If the existence of input subsidies in crop agriculture is ignored, nominal rates of protection in the two sectors were almost the same between 1999/2000 and 2003/04, and trade policy was therefore about neutral at this aggregate level.

(3) However, when agricultural input subsidies are included in the comparison (by comparing the DRA for crop agriculture with the NRA for manufacturing) agricultural protection exceeds manufacturing protection from 1999/200 to 2003/04

It would be tempting to speculate from this that, for the first time since at least 1971 (and probably before), in about 2000 the Indian protection/ subsidy pendulum had swung in favor of agriculture. For a number of reasons such a conclusion would not be justified. Firstly, two major agricultural sectors-fresh fruit and vegetables and dairying-are not included in the comparison. Including approximate time series NRA estimates for these in the agricultural aggregate narrows the difference with manufacturing during this period, and the difference is further narrowed when approximate NRAs for the mining sector are aggregated with manufacturing. Secondly, as emphasised in the studies in which the agricultural and manufacturing estimates are discussed in detail, there are many possible sources of estimation error in both the agricultural and non-agricultural series, which make it unlikely that small differences are statistically significant. Thirdly, because agricultural tariffs are redundant by very large margins, the implicit protection rates of individual commodities can vary from year with fluctuating domestic and especially fluctuating world prices. For example, from 2007 there were spectacular increases in world cereal and dairy product prices which were not matched by increases in the Indian prices of these products, resulting in sharp reductions in estimated Indian milk and other dairy product NRAs. If price comparisons were made, similar reductions would certainly be found in Indian cereal NRAs. In addition to these new developments, which appear to have reintroduced anti-agricultural bias, it would be hazardous to predict the future trends of relative incentives for agriculture, given the continuing presence of the STEs in cereal trade, and of very high redundant agricultural tariffs. The concluding section briefly discusses some possible future directions of relative incentives, focusing on the likely effects of alternative policies on rural poverty.

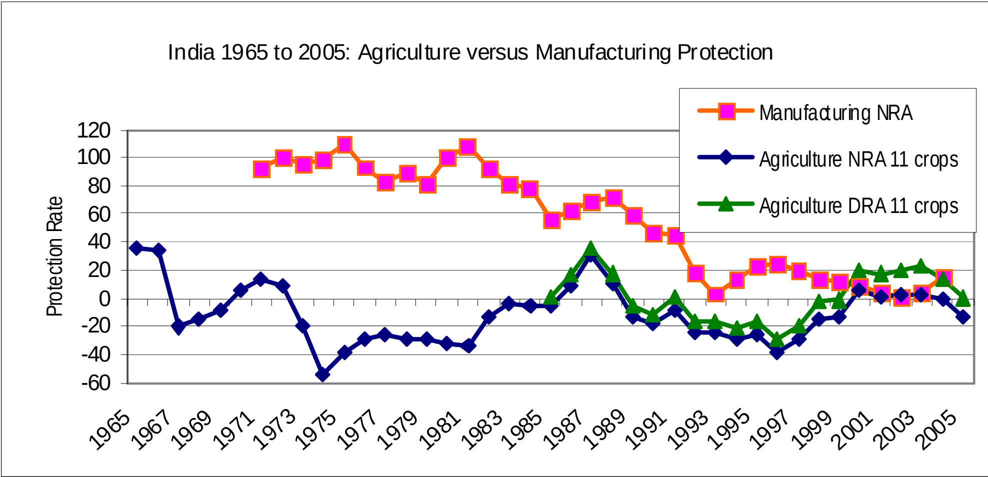
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[24] The NRA (alternatively called the nominal rate of protection) is simply the percentage difference between the domestic price and the international reference price of the 11 commodity bundle. Both this and the DRA concept are described in the paper by Pursell, Gulati and Gupta (2009) which reports these series.

[25] The DRA is defined in the same way as the NRA except that the price equivalent of the input subsidies are added to the domestic ‘price’ of the 11 commodity bundle.

[26] For a summary of this study see M Schiff and A.Valdes (1992)

Figure 12.1: India 1965–2005: Agriculture versus Manufacturing Protection



Conclusions: Future Policy Directions and Rural Poverty

The time series estimates discussed in this chapter show that at least since 1970/71 and probably well before, Indian agriculture was taxed relative to the principal non-agricultural tradeable sector, manufacturing The policy of import-substitution protection for manufacturing which was the principal distorting influence during these years also discriminated against the tradeable service sectors and delayed their expansion. This situation ended almost exactly at the turn of the century. After that for about five years relative incentives were approximately neutral. Where are future policies likely to head? Three possible directions can be distinguished, each of which would have different consequences for rural poverty.

One possibility is that the Indian government will reverse its present open trade policies for the manufacturing and mining sectors in the face of import competition resulting from disruptions in some world markets and/or from real appreciation of the Rupee. If that were to happen it would have negative consequences for the agricultural sector, as it did in the past when resources were pulled out of agriculture into some much less efficient and wasteful uses in manufacturing. This in turn would hurt low income groups in both rural and urban areas by slowing the rate of economic growth and the rate of growth of demand for labour. But for many reasons, some of which are discussed in Chapter 7 of this book, such a reversion to the old restrictive manufacturing trade policies seems highly implausible, not least because of the rapid growth of Indian manufactured exports and the success of Indian multinationals in world markets.

A second possibility that seems more plausible, is that a major and sustained improvement world wide in the terms of trade for agricultural products occurs, but that Indian policy makers intervene and prevent actual or potential agricultural exporters from taking advantage of it, by banning, restricting or taxing agricultural exports in the interests of low and stable domestic prices. There is a long history of this kind of intervention which has affected many agricultural commodities, notably common rice, cotton and hides and skins during the ‘license Raj’ years, and in recent times onions and

skim milk powder[27]. But given the strength of rural farm lobbies and of private agricultural processors in India's present political economy, it seems unlikely that restrictive export policies of this kind could be maintained over long periods if substantial export opportunities would be lost or compromised as a result. In that case poor rural and urban groups could be hurt, especially if there were major export-induced price increases in food grains, milk and dairy products, outweighing the favorable induced effects of agricultural expansion on rural wages and indirectly on urban wages. To alleviate the poverty impact on these groups, the subsidies for rice and wheat supplied to BPL households could be increased,[28] but it would be preferable to use better targeted programs (such as food stamps) to reach them.

A third possibility is that, behind India's present high redundant agricultural tariffs, domestic food and other agricultural prices rise over time, and increasingly diverge from international prices, especially if Indian inflation is low and the exchange rate appreciates. Unless past long term downward trends in world agricultural prices go into reverse (as in the second scenario above), this seems a highly plausible possibility which will be extremely difficult to resist, even though — for the reasons given in the first section A of this chapter-it would hurt low income rural and other groups. Part of the political economy problem is that if the price diversion process occurs only slowly over a relatively long period, its negative effects on poverty could be partly offset along the way with increasing food subsidies through the PDS, and with increasing farmer input subsidies supplemented perhaps by direct farm subsidies. Eventually, however, the diversion problem in the PDS will limit further increases in these subsidies, and the fiscal costs and associated inefficiencies associated with the farm input subsidies are already serious political economy deterrents to further increases.[29] At this point, the experience of many other countries suggests that the politically least painful route to take is to allow the price divergence to continue and increase, reacting only to sharp unexpected price increases but not to the long term trends. At present not much opposition to such a development is apparent in India, even though the negative consequences for rural and urban poverty are well understood. The obvious preventive remedy would be to reduce the protective ceiling presently provided by India's very high agricultural tariffs and its agricultural non-tariff barriers, but India is most unlikely to do this while tariffs, subsidies and other import barriers (especially in developed countries), and more recently export restrictions and taxes, severely distort and destabilise world agricultural markets. Nevertheless, some applied research in India on the impact of agricultural protection on rural poverty would be helpful, and could possibly influence agricultural trade policies in more constructive and economically rational directions.[30]

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[27] Skim milk powder exports which were expanding rapidly to take advantage of high world prices in early 2007, were banned during the 'lean season' in order to restrain increases in domestic milk and dairy product markets

[28] Illegal diversion is a long standing problem for the PDS which increases with the difference between open market prices and the subsidized prices

[29] For a discussion of this issue see Gulati and Naryanan (2003).

[30] Examples of useful studies which can contribute to understanding of these issues are Gulati and Kelley (1999), and Warr (2005) on Indonesian rice. Gulati and Kelley use a multi-market partial equilibrium model which simulates the welfare effects of trade liberalization scenarios in number of interlinked markets in India.

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13
Market Integration in Wholesale Rice Markets in India*

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13.1 Introduction

The level of integration of agricultural markets is a critical determinant of agricultural price policy in developing countries, particularly large ones. If agricultural markets are not integrated, then any local food scarcity will tend to persist, as distant markets (with no scarcity) will not be able to respond to the price signals of such isolated markets (Dreze and Sen, 1995). Lack of integration can often lead to localized food scarcity, even famines (Currey and Hugo, 1985). Testing for such integration is, therefore, central to determining the (geographical) level at which agricultural price policy should be targeted, at least in the short-run. If all agricultural markets were not integrated at the national level then a national agricultural price policy would not be suitable. It would be more appropriate to target a common price policy to a set of integrated markets. In the longer run it would be imperative to enhance market integration across the board in order to reap the advantages of a large market.

This chapter conducts robust tests for market integration in 55 wholesale rice markets in India. We briefly review the literature, followed by reviews of the data and methodology. Next we present the results, then review some restrictions on internal trade in India. The conclusion follows.[1]

13.2 A Brief Literature Review — Three Generations of Market Integration Studies

Testing for market integration is central to the design of an agricultural price policy in large developing countries and has been an area of abiding research interest. This literature can be divided into three broad categories. Until recently two broad approaches had been used to investigate market integration: (i) that devised prior to the use of cointegration techniques (for example, Goletti, 1994, Ravallion 1988, and Currey and Hugo, 1984); (ii) those using cointegration methods of the Engle–Granger variety (for example, Dercon, 1995, Jha et al., 1997) and those using Johansen maximum-likelihood techniques (for example, Wilson, 2003). To the extent that agricultural prices tested are non-stationary the latter technique is more appropriate. However, recent work has pointed out some deficiencies even in the popular cointegration approach.

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1 Details of some results not discussed in Section 13.4 are available from the first author.

The Goletti–Ravallion tests conceive of two forms of market integration. One is between a 'central' market and any other market. This involves estimation of (13.1).

$$P_{it} = \sum_{l=1}^{n} \alpha_{il} P_{i,t-1} + \sum_{k=1}^{N} \sum_{s=0}^{m} \beta^{k}{}_{is} P_{k,t-s} + X_{it} c_i + \varepsilon_{it} \quad (13.1)$$

where P_{it} = price in ith central market at time *t;*

P_{kt} = price in kth market at time *t*;

X_{it} = vector of exogenous variables (in high frequency, for example, monthly data, time is the sole exogenous variable;

ε_{it} = stochastic error term;

α's, β's and c's are parameters to be estimated.

(13.1) states that condition on *i* being the central market, the price in the ith market is determined by its own lags and the lagged prices in other markets along with exogenous variables.

The second notion of market integration generalizes the notion of the central market and, therefore, considers bilateral market integration between any pair of markets *i* and *j*. This involves estimation of (13.2):

$$P_{it} = \sum_{l=1}^{n_1} \alpha_{il} P_{i,t-1} + \sum_{s=0}^{n_2} \beta_{ij,t-s} P_{jt-s} + X_{it} c_i + \varepsilon_{it} \quad (13.2)$$

Results in market integration usually involve the following five tests:

(i) Market Segmentation

H_0: $\beta_{ij} = 0$ for j = 0,1,2,3, …; $i \neq j$. If this null hypothesis cannot be rejected then we have market segmentation for the ith market from the jth market.

(ii) Short-run market integration

This tests whether a price change in the central market will be immediately passed on to the ith market. If this is case then the central market and the ith market are integrated in the short run. This would be the case if

H_0: $\beta_{ij,0}=1$ is accepted.

(iii) Long-run market integration

The test for the long-run integration of the ith and jth market is given by testing whether the following restriction holds.

$$\sum_{l} \alpha_{il} + \sum_{s=0} \beta_{ij,t-s} = 1$$

If this is the case then he short-run process of price adjustment described by the model is consistent with and equilibrium in which a unit increase in central prices is passed on (exactly) fully to local prices. Acceptance of short-run market integration implies long-run integration but that the reverse is not necessarily true.

(iv) Weak Integration

The test statistic used in this case is

H_0: $\sum_{i} \alpha_i + \sum_{s} \beta_s = 0$ for any *t*.

If this null hypothesis is not rejected then the tth period price in the *ith* market is determined by the *t*th period price in the *jth* market.

(v) No arbitrage Possibilities

H_0:c_i=0. If this restriction is satisfied then it would follow that the markets are not providing any opportunity for arbitrage and are, hence, efficient in this sense of the term.

In the Indian case while Jha et al. (1997) study market integration using monthly data for 44 centre for rice and 47 centres for wheat using the Engle–Granger methodology. Following from the work of Engle and Yoo (1987) the authors estimate

$$p_{it} = \alpha_0 + \sum_h \beta_{ih} p_{i(t-h)} + \sum_{k \neq i} \sum_v \gamma_{ik}{}^k p_{k(t-v)} + \varepsilon_{it} \tag{13.3}$$

where all prices are I(1).

Wilson (2003) uses Johansen's full information likelihood estimation techniques to identify markets that are cointegrated. He estimates

$$\underline{p}_t = \Theta + \sum_{s=1}^{k} \Phi_s \underline{p}_{t-s} + \sum_{\tau=0}^{l} \Psi_\tau \underline{x}_{t-\tau}\ ,\ \forall t = 1, 2, \ldots, T \tag{13.4}$$

The VAR has a general error correction mechanism

$$\text{(ECM)}: \Delta \underline{p}_t = \Theta + \sum_{s=1}^{k-1} \Gamma_s \Delta \underline{p}_{t-s} + \Pi \underline{p}_{t-k} + \sum_{\tau=0}^{l} \Psi_\tau \underline{x}_{t-\tau}\ ,\ \forall t = 1, 2, \ldots, T$$

with $\Pi \underline{p}_{t-k}$ matrix:

$$\Pi \underline{p}_{t-k} = \begin{bmatrix} \pi_{10} & \pi_{11} & . & . & \pi_{1n} \\ \pi_{20} & \pi_{21} & . & . & \pi_{2n} \\ . & . & & & . \\ . & . & & & . \\ \pi_{n0} & \pi_{n1} & . & . & \pi_{nn} \end{bmatrix} \begin{bmatrix} 1 \\ p_{1,t-k} \\ . \\ . \\ p_{n,t-k} \end{bmatrix}$$

The empirical findings suggest greater market integration in the post-reform phase. The paper also quantifies a short run equilibrating price elasticity, which indicates the ability of individual markets to return to equilibrium when faced with short-term commodity price shocks.

However, the work of Gonzalez–Rivera and Helfand (2001) (henceforth GRH) argues that it is not sufficient for market integration to hold that (I(1)) prices in an *n*-market system be cointegrated. In particular, if there is a single common factor linking these markets then there should be n-1 cointegration vectors. However, this is insufficient to validate the bivariate approach. A cointegrated system can be written as a vector error correction model (VEC). In a system with *n* locations each equation of the VEC is likely to contain error correction terms and lags from numerous other locations in the market system. The standard approach necessarily restricts each equation of the VEC to have at most one error correction term and implied lag structures. In most cases this would be a gross misspecification of the model. The GRH model overcomes this problem. Rashid (2004) has also used this methodology.

13.3 Data and Methodology

With this as background it would not be surprising to discover lack of market integration in agricultural markets in India. That the extant analysis does not pick this up is probably a result of the technology to ascertain such integration.

This chapter follows GRH (2001) in using a two-dimensional — trade and information — notion of market integration. For a market to be called integrated, we require that the set of locations share (for the same traded commodity) the same long run information. In other words, a set of *n* markets with I(1) prices there should be linked through a cointegrating vector. Those centres that are not part of this cointegrating set-up cannot be said to integrated. The vector error correction model within this set of cointegrated prices gives indications of short-run market linkages.

Consider an *nx1*non-stationary I(1) vector of log-prices at time *t*:

$P_t = [P_{1t,} ..., P_{2t}]$ where P_{it} is the log-price at centre *i* at time period *t*. Suppose that P_t can be decomposed into two components as follows:

$$P_t = A_{nxs} \ f_t + \tilde{P}_t \qquad (13.5)$$

where f_t is an sx1 vector of s(s<n) common unit root factors and $\tilde{P}_t$ is an nx1 vector of stationary components. Every element in the vector $\tilde{P}_t$ can be explained by a linear combination of a smaller number of I(1) common factors f_{it} (permanent component) plus an I(0) or transitory component (for example, $P_{it} = \sum_{j=1}^{s} a_{ij} f_{jt} + \tilde{P}_{it}$). In the long run the P_{it} move together because they share the same stochastic trends. GRH (2001) argue that as shown by the Granger Representation Theorem (Engle and Granger, 1987) the representation in (5) is guaranteed if an only if there are n-s cointegrating vectors among the elements of the vector P_t. A major result of the Granger Representation Theorem is that a cointegrated system can be written as a Vector Error Correction (VEC) model

$$\Delta P_t = \mu + \Pi P_{t-1} + \Gamma_1 \Delta P_{t-1} + \Gamma_2 \Delta P_{t-2} + ... + \Gamma_p \Delta P_{t-p+1} + \varepsilon_t \qquad (13.6)$$

where Γ and Π are nxn matrices and Π has reduced rank n-s. The matrix Π can be written as $\Pi = \alpha\beta$, where α is an nx(n-s) matrix of coefficients and β is an nx(n-s) matrix of cointegrating vectors. Using this expression for Π we get ΠPt-1= αβ'Pt-1 = αZt-1. The error correction term is Zt-1 = β'Pt-1 and α is the matrix of adjustment coefficients. The elements of the matrix β cancel the common unit roots in Pt, and in the long run, link the movements of the elements of Pt. Complete market integration in the sense of GRH (2001) requires that s=1 because they are searching for locations that share the same long run information. Searching for just one common factor is equivalent to searching for n-1 cointegrating vectors. In this approach the *economic market* is not given *a priori* by the set of locations where a good is produced and/or consumed. Nor is the existence of cointegrating prices sufficient to find the market. It needs to be found through a multivariate search for a single common factor. In the case of wholesale markets for rice in India we find this to be true for some subsets centres out of a total of 55 that we analyzed. Table 13.1 details the set of centres analyzed.

The *modus operandi* of the analysis involves searching for the largest number of locations that share n-1 cointegrating vectors in a multivariate VAR framework — the reduced rank VAR proposed by Johansen (1988, 1991). This tests for the rank of Π and, concurrently, estimates the number of cointegrating vectors as well as the vector error correction model. Thus, in contrast to the Engle–Granger two step procedure, as used in Jha et al. (1997) and other contributions, this is a single step procedure and, hence, more

efficient. Along with identifying the number of cointegrating relations and estimating them, this procedure also estimates the short-run dynamics. Further, the existence of n-1 cointegrating vectors means that the vectors can be normalized in such a way that there are conitegrating relations between any pair of centres. However, a bivariate analysis is not justified since the true relationship between the markets is still a multivariate one.

Table 13.1: List of 55 Centres for Rice Studied in this chapter

Serial #	*Centre*	*State*	*Serial #*	*Centre*	*State*	*Serial #*	*Centre*	*State*
1	Nellore	Andhra Pradesh	20	Bangalore	Karnataka	38	Tirunelveli	
2	Kakinada,		21	Trivandrum	Kerala	39	Chidambaram	
3	Vijayavada		22	Kozhikode		40	Tiruchirapalli	
4	Nizamabad		23	Raipur	Madhya Pradesh	41	Agartala	Tripura
5	Bhimavaram		24	Raigarh		42	Azamgarh.	Uttar Pradesh
6	Tadepalligudem		25	Jabalpur		43	Kanpur	
7	Hyderabad		26	Jagdalpur		44	Nowgarh	
8	Gauhati,	Assam	27	Durg		45	Varanasi	
9	Tihu		28	Indore		46	Lucknow	
10	Hailkandi		29	Nagpur	Maharashtra	47	Allahabad	
11	Ranchi .	Bihar	30	Imphal	Manipur	48	Sainthia	West Bengal
12	Dumka		31	Sambalpur	Orissa	49	Bankura	
13	Jamshedpur		32	Balasore		50	Contai	
14	Arrah		33	Jeypore		51	Calcutta	
15	Patna		34	Cuttack		52	Cooch-behar	
16	Sasaram		35	Amritsar	Punjab	53	Balurghat	
17	Rajkot	Gujarat	36	Kumbakonam	Tamil Nadu	54	Siliguri	
18	Karnal	Haryana	37	Madras		55	Delhi	Delhi
19	Shimoga							

We use wholesale prices on medium quality rice for these centres. Monthly data from January 1970 to December 1999 (30 years, 360 data points) from the publication *Agricultural Situation in India* are used. Other sources of data for the analysis in this paper include (i) *Agricultural Marketing in India,* Ministry of Food and Agriculture, GOI; (ii) *Agricultural Prices in India,* Ministry of Food and Agriculture, GOI; (iii) *Area and Production of Principal Crops in India,* Ministry of Food and Agriculture, GOI (iv) *Economic Survey,* GOI (various years); (v) *Farm Harvest Prices of Principal Crops in India*, Ministry of Food and Agriculture, GOI; (vi) *Five-Year Plan Documents,* GOI and *(vii) Union Budget, 2004–05*, GOI.

In line with GRH (2001) we start with the full set of 55 markets over the period January 1970 to December 1999 (monthly data). We conduct the ADF and KPSS tests to confirm that the (natural logs) of these price series are all I(1).[2] We begin with all the *n* centres and test whether we can find n-1 cointegrating vectors using the trace test based on the likelihood statistic. Since there are less than n-1 cointegrating vectors we conduct a search of the subsets of these centres for which this holds. This procedure is continued until we identify all the sets of centres for which this result holds. As GRH (2001) indicate this sequential procedure is subject to some pre-testing problems and its econometric rationale needs further study. However, this methodology provides a much more robust methodology for the test of market integration than extant techniques (Rashid, 2004).

Finally we estimate the common factor, f_{1t} for each of these subsets. This is derived from the specification of the error correction model (6). Two conditions are needed to identify the common factor. The first imposes the condition that f_{1t} be a linear

[2] These results are not reported here to conserve space. Monthly dummies are added.

combination of the vector of prices $\{P_{1t},\ldots,P_{nt}\}$ so that $f_{1t}$is observable. The second condition requires that in (5) the transitory component $\overline{P}_t$ does not Granger-cause the permanent component Af_{1t} in the long run. Thus any shock that affects the transitory component is not transmitted to the long-run forecast of P_t. This condition implies that in the vector error correction model the only linear combination of $\{P_{1t},\ldots,P_{nt}\}$such that $\overline{P}_t$ does not have any long run effect on P_t is

$$f_{1t} = \alpha_o' P_t \qquad (13.7)$$

where $\alpha_o'\alpha = 0$. This orthogonality condition meant that the vector α_o eliminates the error correction term $Z_{t-1} = \beta' P_{t-1}$ from the vector error correction model, guaranteeing no effect of the transitory component on the long run forecast of P_t. Equation (13.7) can be used to reveal the locations that contribute to the transmission of long run information.

13.4 Results

In Table 13.2 we report the largest set of common factors across various wholesale rice markets in India, for example, all centres in Common factor 1 are integrated with 6 cointegrating vectors across them. Subsets of these markets also satisfy these conditions but are not reported here. Also omitted is any mention of bilateral market integration between any two markets.

The size of any individual coefficient in any common factor in Table 13.2 indicates the contribution of that centre to the long run price connecting the markets in the particular common factor. Thus in the first common factor Hyderabad, has the strongest influence followed by Bangalore, Vijaywada and so on. Common factors 3 and 5 involve centres within the same state (Assam in the case of common factor 3 and Bihar in the case of common factor 5) whereas centres in Common factor 1 and 4 belong to states that are contiguous (Karnataka and Andhra Pradesh in the case of Common Factor 1 and Andhra Pradesh and Orissa in the case of Common factor 4). Common factor 2 is the only one where the centres are separated by considerable distances. What is remarkable about Table 13.2 is the relative paucity of market integration in rice markets.

Table 13.2: Common Factors across Various Wholesale Rice Markets in India

Common factor 1	Bangalore	Nellore	Kakinada	Vijayvada	Nizamabad	Tadepalli	Hyderabad
	0.55	0.05	0.002	0.151	0.07	0.07	0.8
Common factor 2	Trivandrum	Guahati	Amritsar				
	0.29	0.84	0.44				
Common factor 3	Gauhati	Tihu	Haikandi				
	0.99	0.008	0.05				
Common factor 4	Kakinada	Sambalpur	Balasore	Jeypore	Cuttack		
	0.91	0.18	0.02	0.36	0.03		
Common factor 5	Ranchi	Dumka	Arrah	Patna	Jamshedpur		
	0.49	0.51	0.42	0.42	0.37		

Table 13.3: Diagnostic Statistics for Various Common Factors

Common Factor 1			
	AIC	=	-16.7265
Log likelihood = 3140.4	HQIC	=	-16.1329
Det(Sigma_ml) = 5.95e-17	SBIC	=	-15.2337
Common Factor 2			
	AIC	=	-8.9063
Log likelihood = 1644.681	HQIC	=	-8.70843
Det(Sigma_ml) = 2.11e-08	SBIC	=	-8.40871
Common Factor 3			
	AIC	=	-8.99795
Log likelihood = 1661.132	HQIC	=	-8.80008
Det(Sigma_ml) = 1.92e-08	SBIC	=	-8.50037
Common Factor 4			
	AIC	=	-14.4932
Log likelihood = 2689.536	HQIC	=	-14.1147
Det(Sigma_ml) = 2.14e-13	SBIC	=	-13.5413
Common Factor 5			
	AIC	=	-14.2942
Log likelihood = 2653.816	HQIC	=	-13.9157
Det(Sigma_ml) = 2.61e-13	SBIC	=	-13.3423

Diagnostic statistics for the results are noted in Table 13.3. Lag selection was done on the basis of minimizing the Akaike Information Criterion (AIC).

Table 13.4 indicates that it was important to estimate the vector error correction models (separately) as systems. In the case of the first common factor, for instance, all the error correction terms are significant.

Results on the vector error correction terms and the normalized cointegrating vectors as well as on the non-parametric tests for the significance of the cointegrating vectors are not reported here to conserve space but are available from the corresponding author. All cointegrating vectors are strongly significant.

The results discussed above pertain to integration when more than two centres are involved. In Table 13.5 we report on absence of market integration on a bilateral basis in markets not included in the five integrating relations studied[3] in Tables 13.2 to 13.4.

Table 13.5 provides some indication of the reasons behind the relative lack of market integration in rice markets. A major centre like Madras, for example, is not integrated on a bilateral basis with as many as 35 centres outside the state in which it lies (Tamilnadu) but is integrated on a bilateral basis with all the centres within Tamilnadu. This broad qualitative result appears quite general. Any given centre in any state is more likely to be integrated on a bilateral basis with other centres within the state than with those outside it. This indicates that there are barriers to market integration across states. We discuss some aspects of this in the next section.

[3] Patterns of bilateral integration are not reported here to conserve space but are available from the corresponding author.

Table 13.4: Significance of Vector Error Correction Terms

Common Factor 1

Equation	*Parms*	*RMSE*	*R-sq*	*Chi2*	*P>chi2*
D_lbangalore	18	0.048014	0.1871	78.2374	0
D_lnellore	18	0.084656	0.2365	105.3127	0
D_lkakinada	18	0.063775	0.2543	115.9615	0
D_lvijayawa	18	0.057628	0.2482	112.2377	0
D_lnizamabad	18	0.070069	0.1176	45.30648	0.0004
D_ltadepalligum	18	0.06636	0.256	116.9701	0
D_lhyderabad	18	0.148814	0.4074	233.7344	0
Common Factor 2					
D_ltrivandrum	14	0.041752	0.085	31.9676	0.004
D_lgauhati	14	0.065689	0.2078	90.24388	0
D_lamritsar	14	0.056823	0.0976	37.18942	0.0007
Common Factor 3					
D_lgauhati	14	0.06497	0.2251	99.90458	0
D_ltihu	14	0.041159	0.0747	27.76145	0.0153
D_lhailkandi	14	0.058766	0.0952	36.18289	0.001
Common Factor 4					
D_lkakinada	16	0.0641	0.2423	109.3593	0
D_lsambalpur	16	0.050348	0.2412	108.6867	0
D_lbalasore	16	0.063545	0.3047	149.8612	0
D_ljeypore	16	0.062275	0.3066	151.2031	0
D_lcuttack	16	0.046538	0.3258	165.2758	0
Common Factor 5					
D_lranchi	16	0.054861	0.2164	94.44115	0
D_ldumka	16	0.072145	0.3068	151.3524	0
D_larrah	16	0.065826	0.2762	130.5181	0
D_lpatna	16	0.057465	0.2853	136.5444	0
D_ljamshedpur	16	0.047774	0.2299	102.1048	0

13.5 Restrictions on Internal trade

The share of internal trade was 13.4 per cent of GDP, in real terms, in 2001–02. The growth rate during the 1990s was 6.9 per cent per annum. Despite this internal trade is amongst the most repressed sectors of the economy, even today. There are controls and restrictions exercised by multiple authorities, at various levels. This results in serious barriers to trade at the inter-state and inter-district levels. There are differences in taxes and standards across the country. As a result of these restrictions and differentials the all-

India market is fragmented. Traders are obliged to obtain licenses for trading and there are different authorities for issuing licenses for different goods. The process is highly time consuming, cumbersome, costly, variable and invariably corrupt. After obtaining a license the trader is faced with over 400 laws that govern trading. This plethora of restrictions and inherent differentials across the country prevent rational and uniform pricing strategies. The price differentials, in turn, do not reflect inherent market conditions and allow local scarcities to remain. The restrictions on trade prevent arbitrage possibilities, which could possibly help remove short-term price differentials. Some of the most important trade restrictive laws are:

- The Essential Commodities Act, 1955.
- Standard of Weights and Measures Act, 1976.
- Agricultural Produce Marketing Acts.
- Various Agricultural Commodity Control Orders.
- Prevention of Food Adulteration Act, 1955.
- State Levy Control Orders.

The first Act controls production, storage, transport, distribution, use or consumption of a wide range of commodities. It authorizes the Central Government to issue Orders for ‘increasing cultivation of foodgrains’, ‘controlling prices’, ‘regulating or prohibiting any commercial or financial transactions in food items’ and ‘collecting any information’, amongst other things. The State Levy Orders make it compulsory for private rice mills to supply 7 to 75 per cent of their production to the Food Corporation of India and the State Government, for the Public Distribution System. The important point with such Orders is that the price received by the millers is ‘pan-territorial and pan-seasonal’. It is based on the Minimum Support Price for paddy plus average milling cost. Thus, for a major part of their output mills are not free to fix their price in accordance with economic considerations.

Government Food Supplies

Wheat and rice are the two principal foodgrains used by the Central Government for market price stabilization and for ensuring food security through the Public Distribution System. Rice is mainly procured for the Central Pool from a levy imposed on the rice millers/traders under the Essential Commodities Act, 1955 and the levy orders issued by the State Governments. The foodgrains stock maintained in the Central Pool by the Government is basically utilized for distribution to states for the PDS. The Food Corporation of India (FCI) has been the agent of the Government of India in the implementation of its grain policy. It was set up in 1964 ‘to undertake the purchase, storage, movement, transport, distribution and sale of food grain and other foodstuffs’.

Earlier, grain procurement was largely confined to wheat and rice in the traditionally surplus states. This operation has now been extended to other states to provide price support to growers. Continuous availability of foodgrain is ensured through about 450,000 fair price shops spread throughout the country. A steady availability of foodgrains at fixed prices is assured which is lower than actual costs due to government policy of providing subsidy that absorbs a part of the economic cost (about 45 per cent). The stocks are issued at highly subsidized to Below Poverty Line (BPL) families. There are a number of public schemes, like Antodaya Anna Yojana, Mid-Day-Meals Scheme, Sampoorna Gramin Rozgar Yojana, and so on, under which food (rice and wheat) is supplied at highly subsidies rates or for free.

Table 13.5: Absence of Market Integration in Markets Not Included in Table 13.2

Centre	*State*	*Not bilaterally cointegrated with*	
		Centres outside State	*Centres within state*
Bhimavaram	Andhra Pradesh	Agartala, Sainthia, Cooch-behar, Balurghat, Gauhati, Dumka, Nagpur, Imphal, Kumbakonam, Madras, Tirunelveli, Tiruchirapalli	Tadepalligudem, Hyderabad
Sasaram	Bihar	Nizamabad, Tihu, Hailkandi, Rajkot, Delhi, Karnal, Shimoga, Trivandrum, Kozhikode, Raigarh, Jabalpur, Jagdalpur, Indore, Sambalpur, Balasore, Cuttack, Amritsar, Madras, Agartala, Azamgarh., Nowgarh, Varanasi, Lucknow, Bankura	Arrah, Ranchi, Jamshedpur
Rajkot	Gujarat	Tihu, Haikandi, Sasaram, Karnal, Trivandrum, Kozhikode, Jabalpur, Indore, Amritsar, Madras, Agartala, Calcutta	
Karnal	Haryana	Tihu, Haikandi, Jamshedpur, Sasaram, Rajkot, Kozhikode, Jabalpur, Durg, Indore, Amritsar, Madras, Agartala, Varanasi	
Shimoga	Haryana	Tihu, Sasaram, Jabalpur, Indore, Amritsar, Madras, Agartala	
Kozhikode	Kerala	Tihu, Haikandi, Sasaram, Rajkot, Karnal, Trivandrum, Jabalpur, Durg, Indore, Amritsar, Madras, Agartala, Calcutta, Siliguri	
Raipur	Madhya Pradesh	Tadepalligudem, Hyderabad, Gauhati, Nagpur, Imphal, Tiruchirapalli, Sainthia, Cooch-behar	
Raigarh	Madhya Pradesh	Tihu, Haikandi, Sasaram, Trivandrum, Amritsar, Agartala, Varanasi, Allahabad, Calcutta, Lucknow	Jabalpur, Indore
Jabalpur	Madhya Pradesh	Tihu, Haikandi, Ranchi, Jamshedpur, Arrah, Sasaram, Rajkot, Karnal, Shimoga, Bangalore, Trivandrum, Kozhikode, Nagpur, Sambalpur, Balasore, Cuttack, Amritsar, Madras, Agartala, Azamagarh, Nowgarh, Varanasi, Lucknow, Bankura, Contai, Calcutta, Siliguri, Delhi	Raigarh, Jagdalpur, Durg, Indore
Jagdalpur	Madhya Pradesh	Tihu, Haikandi, Sasaram, Madras, Agartala, Calcutta,	Jabalpur,
Durg	Madhya Pradesh	Tihu, Haikandi, Karnal, Trivandrum, Kozhikode, Amritsar, Madras, Agartala, Calcutta,	Jabalpur, Indore
Indore	Madhya Pradesh	Nizamabad, Tihu, Haikandi, Sasaram, Rajkot, Karnal, Shimoga, Trivandrum, Kozhikode, Cuttack, Amritsar, Madras, Agartala, Azamgarh, Varanasi, Bankura, Calcutta, Siliguri	Raigarh, Jabalpur, Durg,
Nagpur	Maharashtra	Kakinada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Tihu, Haikandi, Dumka, Trivandrum, Raipur, Jabalpur, Imphal, Jeypore, Kumbakonam, Madras, Tirunelvelili, Chidambaram, Tiruchirapalli, Agartala, Kanpur, Allahabad, Calcutta, Cooch-behar, Balurghat, Lucknow	
Imphal	Manipur	Kakinada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Raipur, Nagpur, Jeypore, Kumbakonam, Tirunelvelili, Chidambaram, Tiruchirapalli, Kanpur, Allahabad, Sainthia, Cooch-behar, Balurghat	
Kumbakonam	Tamilnadu	Kakinada, Vijaywada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Arrah, Patna, Nagpur, Imphal, Jeypore, Kanpur, Lucknow, Allahabad, Sainthia, Cooch-behar, Balurghat	Tirunelvelili, Chidambaram, Tiruchirapalli,
Madras	Tamilnadu	Nizamabad, Bhimavaram, Tihu, Haikandi, Ranchi, Jamshedpur, Arrah, Patna, Sasaram, Rajkot, Karnal, Shimoga, Bangalore, Trivandrum, Kozhikode, Jabalpur, Jagdalpur, Durg, Indore, Nagpur, Sambalpur, Balasore, Cuttack, Amritsar, Azamgarh, Kanpur, Nowgarh, Varanasi, Lucknow, Allahabad, Bankura, Contai, Calcutta, Siliguri, Delhi	
Tirunelveli	Tamilnadu	Kakinada, Vijaywada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Arrah, Nagpur, Imphal, Sambalpur, Jeypore, Agartala, Kanpur, Sainthia, Cooch-behar, Balurghat	Kumbakonam,
Chidambaram	Tamilnadu	Kakinada, Vijaywada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Nagpur, Imphal, Jeypore, Kanpur, Sainthia, Cooch-behar, Balurghat	Kumbakonam, Tiuchirapalli
Tiruchirapalli	Tamilnadu	Kakinada, Vijaywada, Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Patna, Raipur, Nagpur, Imphal, Jeypore, Kanpur, Sainthia, Cooch-behar, Balurghat	Kumbakonam, Chidambaram
Agartala	Tripura	Nizamabad, Bhimavaram, Tihu, Haikandi, Ranchi, Jamshedpur, Arrah, Agartala, Sasaram, Rajkot, Karnal, Shimoga, Bangalore, Trivandrum, Kozhikode, Raigarh, Jabalpur, Jagdalpur, Durg, Indore, Nagpur, Sambalpur, Balasore, Cuttack, Amritsar, Tirunelveli, Azamgarh, Kanpur, Nowgarh, Varanasi, Lucknow, Allahabad, Contai, Siliguri, Delhi	
Azamgarh.	Uttar Pradesh	Tihu, Haikandi, Sasaram, Trivandrum, Jabalpur, Indore, Amritsar, Madras, Agartala, Calcutta	
Kanpur	Uttar Pradesh	Tadepalligudam, Gauhati, Tihu, Nagpur, Imphal, Kumbakonam, Madras, Tirunelveli, Chidambaram, Tiruchirapalli, Agartala	
Nowgarh	Uttar Pradesh	Sasaram, Jabalpur, Amritsar, Madras, Agartala	
Varanasi	Uttar Pradesh	Tihu, Haikandi, Sasaram, Karnal, Trivandrum, Raigarh, Jabalpur, Indore, Amritsar, Madras, Agartala, Calcutta	
Lucknow	Uttar Pradesh	Tihu, Haikandi, Sasaram, Jabalpur, Kumbakonam, Madras, Agartala, Calcutta, Tihu, Haikandi, Trivandrum, Raigarh, Nagpur	
Allahabad	Uttar Pradesh	Tihu, Haikandi, Trivandrum, Raigarh, Nagpur, Imphal, Kumbakonam, Madras, Agartala, Calcutta	
Sainthia	West Bengal	Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Raipur, Imphal, Jeypore, Kumbakonam, Tirunelveli, Chidambaram, Tiruchirapalli	Cooch-behar, Balurghat
Bankura	West Bengal	Sasaram, Jabalpur, Indore, Madras	
Contai	West Bengal	Tihu, Sasaram, Jabalpur, Madras. Agartala	
Calcutta	West Bengal	Haikandi, Jamshedpur, Sasaram, Rajkot, Kozhikode, Raigarh, Jabalpur, Jagdaplur, Durg, Indore, Nagpur, Cuttack, Madras, Azamgarh, Varanasi, Lucknow, Allahabad, Delhi	
Cooch-behar	West Bengal	Kakinada, Bhimavaram, Tadepalligudem, Hyderabad, Gauhati, Dumka, Raipur, Nagpur, Imphal, Balasore, Jeypore, Kumbakonam, Tirunelveli, Chidambaram, Tiruchirapalli,	Sainthia, Balurghat
Balurghat	West Bengal	Bhimavaram, Tadepalligudam, Hyderabad, Gauhati, Dumka, Nagpur, Imphal, Jeypore, Kumbakonam, Tirunelveli, Chidambaram, Tiruchirapalli	Sainthia, Cooch-behar
Siliguri	West Bengal	Tihu, Haikandi, Sasaram, Trivandrum, Kozhikode, Jabalpur, Indore, Amritsar, Madras, Agartala	
Delhi		Tihu, Haikandi, Sasaram, Trivandrum, Jabalpur, Amritsar, Madras, Agartala, Calcutta	

Apart from these schemes a substantial part of the government supply goes to defence establishments. All these amount to a very serious direct intervention in the wholesale grain market, by the government. The Central government issues grain at the Central Issue Prices (CIP). This is then sold in the retail market by state government and other authorities at retail prices through the Public Distribution System (PDS) and other sources. As regards to the price fixation it is done on a very adhoc basis. Most importantly, there is no dynamism about the price fixation. For instance, The Government of India Economic Survey —1999 noted that the Central Issue Prices (CIP) for the Public Distribution System (PDS) had not been revised since 1st February, 1994 despite the year to year upward revisions effected in minimum support prices. CIP for PDS for wheat was Rs. 402 per quintal (Rs. 352 per quintal for Revamped Public Distribution System (RPDS)) and for rice Rs. 537 per quintal for the common variety, Rs.617 per quintal for fine and Rs. 648 per quintal for super fine quality respectively. For RPDS areas, CIP is Rs.50 per quintal less than the CIP for PDS areas. Constant CIP of rice and wheat has resulted in a higher food subsidy burden on the Government.

The State Governments fix the 'retail end' prices for PDS and RPDS after taking into account the transportation cost and dealers' commission, etc. Some States have fixed the 'retail end' prices for PDS and RPDS consumers even lower than the CIP. The Government of Andhra Pradesh, Tamilnadu and Orissa operate a scheme for rice at Rs. 2 per kg. and Government of Gujarat operates a scheme for wheat at Rs. 2 per kg. and the consequent additional subsidy is therefore borne by these States.

In the years, when public stocks fall below the minimum buffer stock norms or when production shortfalls are anticipated, the Government takes recourse to imports for augmenting the buffer stocks. However, depending on the behaviour of the open market prices and the stock position in the Central Pool, the public stock of foodgrains is also utilized for market intervention as an instrument of supply management policy. This form of intervention is rather recent. It has been possible only due to the surplus grain situation. The grain markets in India suffer from a highly significant quantitative intervention due to all the schemes quoted above, as well as, a serious distortion in prices due to government pricing policy, which amounts to a non-pricing policy. Therefore, there are three factors originating in government policy and impinging upon the market:

1) Quantitative interventions.
2) Price distortions, at various levels — farm, wholesale and retail.
3) Heavy subsidies.

The concern here is that if India continues to have good crops and if open sales pick-up then while these distortions persist, in the years to come, there would only be an unwarranted increase in these distortions.

Figure 13.1 shows trends in government intervention in rice and wheat markets between 1970 to 1995.[4] There has been a small rise in percentage of government supplies of rice over wheat in recent years. But this is reflective of the overall substitution of demand towards rice in the country. Table 13.6 further emphasizes this point. Thus the impact of government in grain trade is massive and serious, both in quantitative terms as well as price terms.

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[4] The data are from All India Food Statistics, DES, Ministry of Agriculture, GOI.

Figure 13.1; Government Intervention in wholesale Grain Trade

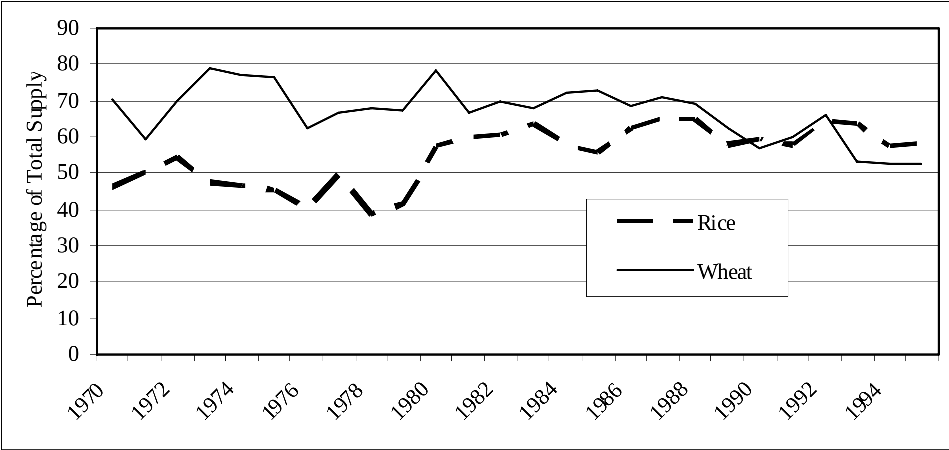


Table 13.6: Average Government Supply as a percentage of Total Supply of Wheat and Rice (1970–95)		
	Wheat	Rice
State	*Percentage*	*Percentage*
Andhra Pradesh	98.56468392	37.10653573
Bihar	89.01432545	27.33808512
Gujarat	59.57122853	61.85753784
Harayana	19.54612708	4.017281192
Kerala		94.92623017
Madhya Pradesh	56.33779013	59.51119554
Maharashtra	88.18409557	86.47153477
Karnataka	93.8750001	46.52830733
Orissa		43.592039
Punjab	10.33546167	0.254909453
Rajasthan	51.80106295	
Tamilnadu		34.52495823
Uttar Pradesh	34.02207643	15.91028157
West Bengal		65.14454229
India (average figure)	66.73544171	55.07647142

Apart from the above restrictions there are serious fiscal and financial constraints. The main financial constraint operates due to very low organized banking sector credit (between 2–4 per cent) being advanced to trade. The margin requirements, which are

meant to control speculation and prices, set by Reserve Bank of India, prevent such lending. Since majority of traders are small and medium traders they do not have enough storage capacity. This, coupled with deficient credit availability, has the effect of preventing optimal inventory holdings, and ironically, creates artificial shortages and higher prices.

Indian states have wide powers of taxation. Under the Indian constitution they can collect revenue on land and buildings, agricultural land and income, mineral rights, alcohol and narcotic substances (except tobacco), entry of goods into a local area for consumption or sale, electricity consumption or sale, sale of goods except newspapers but including works contracts and goods sold through hire purchase, motor vehicles, boats, transport of goods or passengers by road or inland waterways, and roads or inland waterway tolls, professions, luxuries, entertainment and gambling, stamp duties and registration fees on documents and court fees collected through judicial stamp duties. Some important facts about these tax powers are: (i) interstate movement of goods are taxed, (ii) states do not have the right to tax services, (iii) state tax rates on different commodities do not have to be harmonized across states; (iv) the state sales tax structure co-exists with a central sales tax — the CENVAT — and with the central excise tax. This amounts to an uncoordinated and inefficient tax structure. The state level VAT which was implemented on 1 April 2005 is designed to simplify this tax structure at the state end but is highly unsatisfactory at the present time.

13.6 Conclusions

This chapter conducts robust tests for market integration in wholesale rice markets in India. The results indicate absence of such integration across many subsets of these centres.

This chapter has identified the existing labyrinth of controls and government intervention in rice markets, however well intentioned, as counterproductive and responsible for such fragmentation of rice markets. Such fragmentation hurts efficiency of agricultural operations and isolates some markets stunting the functioning of market signals. Much has been written about state discretion and autonomy in some matters of economic policy in India. This is not the place to debate this point but it should be pointed out that this latitude should not extend to placing restrictions on internal trade. Furthermore, this has nothing to do with decentralization of decision-making. An economy such as the US, which is considerably more decentralized than India's, still bans most, if not all, impediments to inter-state trade.

Thus there is an urgent need to reform the rules governing interstate commerce in foodgrains and to overhaul the attendant state government tax policies and regulations. There is an urgent need to reform price policy at the levels of producer, wholesaler and consumer.[5] In addition, it is crucial to privatize wholesale grain in free trade and thus improve the efficiency of market signals. These policy measures are long overdue.

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[5] For a review of this literature see Gulati and Rao (1992), Gulati and Sharma (1997), Gulati et al. (1996) and Persaud and Rosen (2003).

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14

Supermarkets, Smallholders and Livelihoods Prospects in Selected Asian Countries

Raghav Gaiha & Ganesh Thapa[*]

14.1 Introduction

Recent literature (Reardon et al., 2003; Reardon et al., 2004; Swinnen, 2005, 2006; Trail, 2006; von Braun et al., 2005) has drawn attention to the speedy rise of supermarkets in different regions of the developing world and forecast their rapid spread. The emergence of supermarkets has transformed agrifood markets, but at different rates and to a different extent across regions and countries. This transformation is a challenge for smallholders.[1] While the risk of the exclusion of smallholders is real, it is argued that there are opportunities as well.

The scheme of this chapter is as follows. First, an exposition of the factors that have contributed to the rapid growth of supermarkets is presented. In the second section, some light is thrown on regional, subregional and intercountry diversity in the growth of supermarkets. The third section synthesizes the evidence on the nature of the arrangements that prevail between smallholders and supermarket chains and the constraints that smallholders face. In the fourth section, we carry out an econometric analysis of the prospects for growth in supermarkets; we focus on selected Asian countries. In the fifth and final section, we delineate some guidelines, especially from IFAD's perspective, for facilitating the integration of smallholders in a rapidly transforming food and agricultural sector.

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1 In a recent piece, an overly pessimistic scenario is sketched: 'The challenges faced by smallholder agriculture should be seen in the context of the general trends that will influence the structure of agricultural production. Namely, the transformation of diets and rising import competition will contribute to the increasing commercialization of the farm sector in developing countries. This is expected to result in larger operational holdings, reduced reliance on nontraded inputs and increased specialization of farming systems.' See Stamoulis, Pingali and Shetty (2004), page 12.

14.2 Factors Underlying the Spread of Supermarkets

Following Reardon et al. (2004), the diffusion of supermarkets in developing countries may be conceptualized as a system of demand by consumers for supermarket services and the supply of supermarket services. The latter depends on investments by supermarket entrepreneurs.

On the demand side, several factors have contributed to the expansion (used synonymously with diffusion) of supermarkets during the past 5–10 years. These include urbanization and the entry of women into the workforce outside the home. The higher workforce participation of women is reflected in a higher opportunity cost of women's time and represents an incentive for women to buy processed food to save on cooking time. In many cases, this incentive is reinforced by lower processed food prices offered by large-scale food manufacturers because of economies of scale in procurement. Higher per capita incomes are another contributory factor. Convenience of shopping, combined with a preference for variety, attractive packaging and new flavours, also manifests itself in stronger demand for supermarket services.[2] That the size of the middle class is also linked closely to this growing demand is corroborated by recent evidence.[3] The rapid growth of household refrigeration in the 1990s made it easier to switch from daily to weekly or monthly shopping. Easier access to cars and other forms of transportation facilitated this switch.

The supply of supermarket services has also been the result of several factors. The supply of supermarket services was relatively slow in the early 1990s because it was driven largely by domestic capital. In more recent years, a shift has occurred due to foreign direct investment (FDI). In turn, the latter — mostly from Europe, Japan and the United States — reflected the intense competition in domestic markets and the prospects for higher returns in developing countries. There was a surge of FDI following the partial or full liberalization of the retail sector in many developing countries, for example, the partial liberalization in China in 1992 that culminated in 2004 as a provision of that country's accession to the World Trade Organization; Argentina, Brazil and Mexico in 1994; several African countries in the mid-1990s; Indonesia in 1998; and India in 2000.[4] Overall. FDI grew five- to tenfold in these regions during the 1990s, and the growth of FDI in food retailing reflected this growth.[5] Another factor has been the dramatic change in retail procurement logistics technology and inventory management (such as the concept of efficient consumer response). These changes have been key to the centralization of procurement and the consolidation of distribution in order to 'drive costs out of the system' (Reardon, Timmer and Berdegue 2004).[6] These efficiency gains have led to investments in new stores and, in combination with competition, brought about reductions in food prices.

14.3 Regional, Subregional and Intercountry Diversity

Some broad patterns are delineated below.[7]

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2 On the preference for variety in food consumption, see Jha, Gaiha and Sharma (2006).

3 For example, see Trail (2006).

4 For details, see Reardon, Timmer and Berdegue (2004) and Reardon and Berdegue (2006).

5 A recent *McKinsey Report* projects that the freer inflow of FDI will help the retail business to grow from the present US$180 billion to US$460 billion to US$470 billion by 2010 (cited in Chengappa et al. (2007).

6 China Resources Enterprise, for example, notes that it is saving 40 per cent on distribution costs by combining modern logistics with centralized distribution.

7 This draws upon Reardon, Timmer and Berdegue (2004) and ACNielsen (2006).

The first wave of supermarket diffusion occurred in richer countries in Latin America. The second wave followed in East and South-East Asia and Central Europe, and the third in small or poorer countries of Latin America, Asia and Southern and then Eastern Africa. The fourth wave is beginning to affect South Asia and Western Africa.

In Latin America, supermarkets were originally niche retail markets that had a market share ranging from 10 to 20 per cent of national food retail sales in 1990. By 2000, the share had risen to 50 to 60 per cent of national food retail sales in this region. Ranked by market share, Brazil topped the list, followed by Argentina, Chile, Costa Rica, Colombia and Mexico.

Supermarkets began to mushroom in East and South-East Asia five to seven years after the boom in Latin America, but registered more rapid growth. The average share in the South-East Asian countries of Indonesia, Malaysia and Thailand was 33 per cent, but it was 63 per cent in the East Asian countries of the Republic of Korea and Taiwan. China has recorded the most rapid growth in the world: supermarkets appeared in 1991 and, by 2003, had achieved US$55 billion in sales and 30 per cent of national urban food retail sales; most impressive is the growth in the sector: 30 to 40 per cent a year.

Supermarket diffusion has made rapid strides in Central and Eastern Europe as well. This has occurred in three waves. The first wave (in the mid-1990s) emerged in the northern part of the region, where the share of retail food sales ranged from 40 to 50 per cent. The second wave took place in the southern part of the region, where the share averaged 25–30 per cent and was growing rapidly. The third wave has been in Eastern Europe, where the launch was stalled by tardy policy reforms.

The most recent supermarket take-off has been in Africa, especially Eastern and Southern Africa. With a 55 per cent share of supermarkets in overall food retail sales, South Africa is a leading success story.

There are large differences across subregions and countries as well. For brevity, we shall confine our observations to subregions in Asia. This draws upon a recent analysis (ACNielsen 2006). Over the period 2003–2005, while Hong Kong and Taiwan maintained their higher levels of supermarket and convenience store penetration, both China and Korea exhibited a strong upward trend. In South-East and South Asia, except for Singapore (with the highest penetration and a gradual increase), India, Indonesia, Malaysia and Viet Nam exhibited a strong rising trend.

Another striking feature of the diffusion of supermarkets is that it has been far more rapid in processed, dry and packaged foods, such as noodles, milk products and grains, primarily because of economies of scale (relative to traditional retail outlets). The expansion in fresh food markets has been slower, and there is greater variation on account of local habits. A notional estimate of the share of fresh fruit and vegetables in supermarket food retail sales is 50 per cent or lower (Reardon, Timmer and Berdegue 2004). However, interesting to note is the fact that supermarkets in Latin America buy two and a half times more fruits and vegetables from local producers relative to all the exports of produce from Latin America to the rest of the world. This points to the enormous potential of fresh fruit and vegetables for employment and income generation in other regions.

There is also growing evidence of the domination of supermarkets by multinationals, especially in Latin America. Multinationals account for 70–80 per cent of the stores of the top five chains in this region.[8] The consolidation has taken place through acquisitions of local chains in Latin America and elsewhere. For example, during part of 2002, five

8 Much of the FDI retail sales derive from multinationals such as Ahold, Carrefour and Wal-Mart (Reardon, Timmer and Berdegue 2004).

global retailers (for example, Ahold, Carrefour, Tesco) spent 6 billion baht (US$120 million) in Thailand.

Yet another interesting feature is the penetration of supermarkets into small towns and rural areas. In China, for example, supermarkets are spreading rapidly to small cities, the poorer and more remote north-west and south-west and the interior.[9]

14.4 Opportunities for and Constraints on Smallholders

It is argued here that the increasing demand for high-value agricultural products is likely to offer new opportunities for smallholders. This is not to suggest that there are no risks of exclusion among smallholders. Indeed, several sources of exclusion have been identified and corroborated.[10] For example, food safety and quality requirements pose difficult problems. Because of these and economies of large-scale procurement, supermarkets often source from large commercial farmers. However, a recent comparative analysis throws valuable light on the conditions under which smallholders may participate in supply chains to supermarkets to enhance their livelihoods (Boselie, Henson and Weatherspoon 2003). Broadly, the roles of both public and private stakeholders need to be redefined.

Nature of Relationships

Boselie, Henson and Weatherspoon (2003) base their findings on five case studies of the supply chain for fresh horticultural produce sold in African and Asian supermarkets or exported to European supermarkets. The salient features are described in Table 14.1.

In contrast with traditional multilevel and fragmented marketing systems, supermarket supply chains are shorter and more condensed and involve direct delivery to centralized distribution centres. For example, Tops Thailand has reduced the number of its fresh produce suppliers from 250 to 60, while eliminating numerous wholesalers who do not perform value-adding activities. Similarly, Hortico sources directly from 4,000 small producers organized into 20 collection centres that supply a central packing facility.

Actual product flows are coordinated and planned to a high degree of precision. In the case of Alice, for example, a grower programme determines how much to deliver and when. Large farmers deliver directly to a single distribution centre on a daily basis, while small producers deliver once or twice per week.

- Supermarket channels are characterized by specialized logistical facilities and a focus on value added activities. Dedicated collection and distribution centres have been established by Tops, Thai Fresh United, Hortico and Homegrown. These centres grade, wash, pack, label and price the produce as well.
- There are stringent mechanisms for control and compliance. In the case of Homegrown, for example, producers must comply with a written code of practice that specifies equipment, production practices, record-keeping, use of child labour, etc.
- Producers are inspected or are required to join certification schemes (for example, Tops and Thai Fresh United).

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9 For details, see Reardon, Timmer and Berdegue (2004).

10 In a recent study, Deshingkar et al. (2003) review the experience with high-value agricultural activities in Andhra Pradesh, a south Indian State. Their assessment of Government-sponsored schemes in horticulture is mixed because, they find, more jobs are being generated relative to cereals, but the people benefiting are large farmers and landless households. They note, however, that new forms of contractual and sharecropping relationships are emerging between private dealers and farmers that might potentially benefit smallholders.

- Supermarkets or their suppliers provide assistance and inputs within the context of weak public infrastructure. Hortico, for example, provides extension and inputs on a credit basis.

Table 14.1: Main Characteristics of Selected Case Studies

Company country	*Nature of business*	*Mechanisms for control and compliance*	*Smallholders involved*	*Support structures*
Alice South Africa	Vegetable producer group supplying domestic supermarkets	Outgrower scheme, EurepGap certification within two years	300-400	Public-private partnerships (Partnerships for Food Industry Development, Agrilink), Pick 'n Pay supermarket chain
Tops Thailand	Domestic supermarket chain	Preferred suppliers, national public certification scheme	500-600	Affiliation with input provider, public-private partnership (KLICT)[a]
Thai Fresh United Thailand	Exotic fruit and vegetable packer and exporter	Contract farming, EurepGap certification	30	Company extension services, public-private partnership (Programme for Cooperation with Emerging Markets)
Hortico Zimbabwe	Vegetable packer and exporter to European supermarkets	Outgrower scheme	4 000	Company extension services, United States Agency for International Development
Homegrown Kenya	Exporter of non-traditional vegetables to European supermarkets	Outgrower scheme, company code of practice	150	Company extension services

Source: Boselie, Henson and Weatherspoon (2003).
Note: a. KLICT = Ketennetwerken, Clusters en Informatie en Communicatie Technologie (Chain Networks, Clusters and Information and Communications Technology).

A recent evaluation of vertical coordination in high-value food commodities in India (that is, dairy, poultry and vegetables) lends support to the existence of the participation of smallholders (operating on less than 2 hectares). Based on a sample survey, the shares of smallholders participating in contract farming were 56 per cent (dairy), 32 per cent (poultry) and 37 per cent (vegetables). The important point is that contracts are not limited to the requirement to buy these products at fixed prices. Operating through producer associations and cooperatives, contracting firms, especially milk and vegetable firms, provide inputs, technical advice and credit. Also, there is no evidence of monopsonistic buying because the prices paid are higher than the prevailing market prices. Finally, there is risk-sharing because the coefficients of variation of the profits of contract farmers are significantly lower than the corresponding coefficients of non-contract farmers (see Birthal, Joshi and Gulati 2007).[11]

[11] The econometric analysis, however, falls short of checking for a potential selection bias through a two-stage Heckman-type methodology.

Difficulties

Many of the supply chain requirements impose prohibitive costs on smallholders, and this results in their exclusion. For example, Homegrown requires that all its suppliers have toilet and washing facilities, a pesticide store, spraying equipment and pesticide-waste disposal facilities. For smallholders with no access to credit, fulfilment of such requirements is impractical. The risks involved in attempting to meet quality standards are also sometimes considerable. In the case of Hortico, for instance, up to 40 per cent of small growers take losses on their first crops of baby corn because of poor yields or unsatisfactory quality. (Although the learning curve is steep, the debts from initial crop failures are repaid after several plantings.)

If small producers are scattered and infrastructure is weak, collection costs tend to be high. Monitoring and traceability requirements add substantially to these costs. Some suppliers of Thai Fresh United, for example, have been reluctant to invest in the personnel and management infrastructure needed for negotiations with small producers and for monitoring the supply chain. In other cases (for example, Hortico), the supply chain has been overhauled to integrate small producers.

Smallholders are often at a disadvantage because of their illiteracy and limited business skills in negotiating with supermarket suppliers. In specific contexts, weak public extension services and input markets, along with limited access to credit, force smallholders to use outdated techniques. There are a few examples of groups of smallholders negotiating with suppliers (Hortico is a case in point), but these are exceptions to the rule.

What is important, however, is the fact that, despite the disadvantages, smallholders remain involved in the supply chains in India, Kenya, South Africa, Thailand and Zimbabwe.

Comparative Advantages of Smallholders

Several authors, notably Lipton (2006), Boselie et. al. (2003), and Swinnen (2006), have argued persuasively that smallholders enjoy several advantages over large commercial farmers and, given *intermediation* and *internalization*, could easily integrate into the emerging supply chains. Intermediation may take a variety of forms whereby public and private agencies cooperate (for example, food safety standards might be laid down by national governments, and private agencies might help smallholders implement them; rural infrastructure might be strengthened by the public sector through private financing; suppliers might help finance the provision of inputs and provide extension).[12] Meanwhile, internalization involves organizations of producers, especially small producers, that negotiate production and marketing arrangements with supermarkets or their suppliers.[13] Some of the comparative advantages of smallholders are reviewed from this perspective below.

The first advantage is linked to production technologies and the associated labour requirements. Thai Fresh United, for example, has a portfolio of 140 herbs, spices, vegetables and fruits, each of which has stringent quality requirements. Smallholders, especially women, are able to give the careful attention that such crops require. Moreover, it is in their interest to do so, as these are more crucial to their livelihoods. Small producers supplying Hortico, for instance, had lower rejection rates for certain non-traditional vegetables relative to large farmers. By contrast, when Tops Thailand

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[12] It is reported that, in a survey of Kazakhstan, 81 per cent of producers preferred production contracts because these enabled easier access to credit (Swinnen 2006).

[13] For illustrative evidence from India, see Birthal, Joshi and Gulati (2007).

tried to integrate small producers of vegetables, the initiative failed because the quality specifications were not met.

If some crops required by supermarkets involve the use of non-mechanized techniques (for example, pruning and trellising), there may be limited economies of scale in production. In fact, small producers show lower costs because of higher yields or lower capitalization. This offsets higher procurement costs from a larger number of smallholders (a case in point is Thai Fresh United).

The traditional agroeconomic and production practices of smallholders are more amenable to the requirements of supermarkets. In Thailand, Tops has found that smallholders adapt more easily to organic production through crop rotation and selection among resistant varieties.

Small geographically dispersed units facilitate risk-sharing among supermarket suppliers and greater flexibility in procurement. Hortico, for example, responds to unanticipated demand by drawing upon a large number of small suppliers organized into relatively small collection centres.

In some cases, given the large numbers of smallholders, supermarket supply chains have no option but to involve smallholders. Besides, suppliers prefer a mix of small and large producers because of the relative ease of enforcement of production and marketing contracts (Swinnen, 2006).

In sum, many of the difficulties are not insurmountable, and the gains to both producers and consumers are likely to be substantial.[14]

14.5 Analysis of the Prospects for Growth in Supermarkets

An attempt is made here to build on and extend the analysis in Trail (2006). The econometric analysis incorporates demand-supply factors to explain the variation in supermarket penetration (that is, the share of supermarkets in retail food sales). The details are given in the annex, and a summary is given below.

In the estimated model, the dependent variable is the share of supermarkets in retail food sales. In light of the discussion above and a review of the rapid growth of supermarkets, the explanatory variables include income per capita, the share of urban population, a measure of the affluence of the upper-middle-income class, the openness of the economy (confined to a measure of the lack of restrictions on FDI flows), lifestyle changes reflected in higher participation rates among women, and a dummy variable that seeks to capture a threshold effect of the share of urban population (that is, whether the share exceeds 40 per cent of a country’s population). More details on the estimation strategy and the results obtained are given in the annex.

Based on the estimated equation in annex table A.2 and projected estimates of income, urbanization and openness, projections of supermarket shares for 2015 have been obtained.

Data

Much of the data are taken from Trail (2006). The sample size is expanded by incorporating estimates of the share of supermarkets in five additional countries, namely,

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[14] There is, in fact, some evidence that compliance costs (for example, of sanitary and phytosanitary requirements) are low relative to the scale of most export industries. Fixed non-recurrent costs are generally 0.5 to 5.0 per cent of three-to-five year exports, while recurrent costs are 1 to 3 per cent of annual exports (see Umali-Deininger and Sur 2006).

Indonesia, Korea, Malaysia, the Philippines and Thailand.[15] Data on variables not shown in Trail (2006) — the ratio of the income of the top 20 per cent to that of the bottom 20 per cent and participation rates among women for 2002 — are taken from the World Bank's *World Development Indicators 2006*.

Results

The main findings from our econometric analysis are as follows.[16] Supermarket shares vary with per capita income. The shares are also higher in countries where the participation rates among women are higher. The greater the inequality (or, by implication, the greater the affluence of middle- and upper-income classes), the higher the supermarket penetration. Urbanisation has a non-linear relationship to the share of supermarkets. Although the share of the urban population does not have a significant coefficient, there is a threshold effect. In countries in which the urban population share exceeds 40 per cent, the supermarket share is higher. There is a strong positive relationship between the openness index (that is, the ease of entry of FDI) and the supermarket share. This represents a supply-side variable (that is, the ability of multinationals to invest large amounts).

Supermarket Shares in Selected Asian Countries

A selection of projections is given in Table 14.2. One caveat is necessary here. This has to do with the fact that, since the projections are based on cross-country data in which the dependent variable of supermarkets in total retail sales is subject to definitional and measurement inconsistencies, the (predicted) baseline of supermarket shares is likely to diverge from the actual baseline.[17] For this reason, the baseline should be treated with some caution. Nevertheless, some broad inferences may be drawn from the projections, as follows. High rates of growth in supermarket shares are likely in almost all countries selected here. An exception is Pakistan, where the share will rise (relative to the base estimate), but is likely to remain low. The most spectacular rise is likely to be in China, followed by Indonesia and Thailand. India is likely to triple its share, but the share will remain below 10 per cent. Bangladesh, however, is likely to record a much more rapid growth rate.

The Philippines will also achieve a considerably higher share by 2015. A somewhat striking result is that, while the growth rate of income will fuel supermarket expansion, the relaxation of restrictions on FDI is likely to play a far more important role.[18] In China, for example, while projected income will raise the supermarket share to 29 per cent, projected income, urbanization and maximum openness (that is, the index assumes a value of 10) will raise it to 62 per cent. Similarly, in Indonesia, the base share rises from 14 to 16 per cent with projected income in 2015. When this is combined with projected urbanization and maximum openness, the corresponding share rises to 27 per cent. Bangladesh is yet another striking case where the share rises from a low of 2 per cent to 10 per cent, mainly as a consequence of maximum openness.

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[15] For details, see ACNielsen (2006). Comparability with the supermarket shares in Trail (2006) is unlikely because convenience stores are included in the ACNielsen study. However, this is an issue on which an emphatic statement is avoidable since (i) the definitions of supermarkets vary (at least two or three cash registers) and (ii) no firm estimates of discrepancies exist. In any case, similar results are obtained with the smaller sample used by Trail (2006). For details, see the annex.

[16] For details of the econometric analysis, see the annex.

[17] The divergence may also arise because our specification, which is constrained by data, does not capture infrastructural constraints on the growth of supermarkets (for example, transportation and cold storage facilities).

[18] Although urbanization has a significant coefficient (for the dummy variable that allows for a threshold effect), it has a (relatively) minor role in the projections.

Table 14.2: Supermarket Shares in Selected Asian Countries in 2015

Country	*Openness, plus projected income and urbanisation*[a]	*Base (predicted) share, 2002*
Bangladesh	10	2
Pakistan	4	1
India	7	2
China	62	18
Thailand	48	27
Indonesia	27	14
Philippines	36	27
Malaysia	61	51

a. Projections are based on an extrapolation of recent trends in income and urbanization according to *World Development Indicators 2006*. The effect of openness is based on the assumption that the index takes the maximum value of 10.

In sum, the prospects for the expansion of supermarkets are bright in most of the selected Asian countries, including a few of those starting from extremely low shares in 2002. Policy reforms, especially those related to freer flows of FDI, would lead to more rapid growth.[19]

14.6 India's Retail Sector

An overview of India's retail trade sector is given below to illustrate the potential for expansion and the implications for traditional grocery stores and small family enterprises (for example, *kirana* stores).[20]

Retail is the fastest growing sector in the Indian economy. Traditional markets are being transformed into department stores, hypermarkets, supermarkets and speciality stores. However, currently the retail sector is highly fragmented and organised retail is in a nascent stage.[21] More than 80 per cent of the 12 million retail outlets are run as small family businesses, dependent largely on family labour. According to a recent study (Kearney, 2006), an overwhelming proportion of the retail market — valued at $ 200 billion — is unorganised (about 97 per cent). Organised retail employs roughly 5 lakh persons, as against over 3 crore in unorganised retail. Projections point to a rapid growth of organised retailing — touching $23 billion by 2010 — at an annual rate of 25–30 per cent. In early 2006, the government allowed foreign companies to own up to 51 per cent of a single brand retail company (for example, Nike). This is likely to result in a flurry of investment. Several foreign players are entering or planning to enter the Indian market to have the first mover advantage. For instance, Wal-Mart has entered the market through a

[19] In India, FDI is not allowed in retailing. Foreign retailers are, however, allowed to operate through joint ventures where the Indian partner is an export house. Apart from the aberrations linked to the exceptions, there is a plethora of rules and regulations and agencies implementing them. For example, the prevention of food adulteration act of 1954 is implemented by the Ministry of Health; the agricultural produce (grading and marking) act by the Ministry of Rural Development; and laws relating to standards, weights and measurement are under the jurisdiction of the Ministry of Civil Supplies, Consumer Affairs and Public Distribution (Birthal, Joshi and Gulati 2007).

[20] Much of the overview is based on a recent study (Kaur, 2007).

[21] Organised retailing refers to trading organisations mostly making use of hired labour, and with a large enough turnover to require registration with the tax authorities. These comprise corporate-backed hypermarkets and retail chains, and privately owned large retail businesses. Unorganised retailing, by contrast, includes low cost, low capital, and low turnover family operated shops and vendors (Kaur, 2007).

partnership with Bharti Enterprises. Tesco plans to enter the market through a partnership with Home Care Retail Mart Pvt. Ltd.[22] Domestic players such as Reliance have ambitious plans — a projected expenditure of $3.4 billion for establishing a chain of 1575 stores in 2007.

As a result, India is on the verge of a retail boom. However, removal of FDI restrictions and expansion of retail outlets have run into stiff opposition. New supermarkets in Uttar Pradesh, Jharkhand, Madhya Pradesh and West Bengal have sparked protests by small traders and political activists. As noted by Scrutton and Gupta (2007), 'The closure of 10 Reliance stores by Uttar Pradesh state highlighted the choppy progress of India's modernisation, beset by political wobbles and fears for the livelihoods of millions of Indians who work in street markets or small shops'. There have also been reports that some states are likely to impose limits on the size and number of stores, limiting economies of scale and profits of retailers. So the prospects of the retail boom materialising are far from certain.

14.7 Concluding Observations

Our econometric analysis confirms that supermarkets are likely to grow in several countries in the Asia and the Pacific region. Of course, much will depend on capital liberalization, the opening up of the food retail sector and the strengthening of public-private partnerships. As diets and lifestyles change and incomes grow, the demand for supermarket services will increase. In parallel, capital flows and changes in food supply chains will boost the growth of supermarkets. While there is considerable evidence that this would translate into lower food prices for consumers in major cities — and in small towns and in rural areas — and significant spillover effects by freeing up resources, total factor productivity growth and technological advancement (Timmer, 2004), some concerns remain about the exclusion of smallholders.[23] Arguably, under certain conditions that are a feature of food supply chains to supermarkets, smallholders are likely to be at a disadvantage and have actually been excluded from the chains. Either the quality and other requirements (for example, traceability) are much too stringent for the smallholders, or the smallholders simply lack access to extension, modern inputs and credit.[24] However, there are a few success stories as well.

From a strategic perspective, two approaches are distinguishable. One relies on a somewhat narrow interpretation of the role of the State whereby the State concentrates on

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[22] More specifically, Tesco and Carrefour are eyeing the retail market with keen interest but waiting for a relaxation of FDI restrictions.

[23] A comparative analysis of two districts in Andhra Pradesh, a south Indian State, is revealing. It points to the emergence of new production and marketing arrangements for horticulture that have enabled poorer farmers to cultivate and profit from vegetables, while similar groups in other locations have been prevented from benefiting in the same way. A case in point is the group leasing of land to outsiders from neighbouring states. The outsiders are part of a value chain to urban centres. The land is acquired on a verbal lease, and the outsiders drill a new tube well. The outsiders then grow irrigated crops such as tomatoes, brinjal, chillies, carrots and radishes. They enter into the arrangement on the understanding that it will continue for at least five years so the investment may be recovered. The landowners work as wage labourers on the consolidated farms. The system is thus mutually advantageous. Specifically, landowners get regular wage work, acquire new skills and inherit the irrigation system at the expiration of the leases. While most of the profits go to the outsiders, the outsiders also bear the risk of price fluctuations. This arrangement is beginning to spread rapidly among marginal farmers. For details, see Deshingkar et al. (2003). See also the review of ITC's e-Choupals and procurement centres by Witsoe (2006). The reduction in transaction costs and the multiple channels of marketing facilitate the integration of smallholders. For illustrative evidence from India, see Birthal, Joshi and Gulati (2007).

[24] For example, see the evidence in Witsoe (2006).

the provision of public goods (for example, infrastructure, a legal environment conducive to the enforcement of contracts, food safety standards) and allows competitive markets to do the rest. Burdening markets with the integration of smallholders in the interest of poverty reduction and the expansion of livelihood opportunities may involve heavy trade-offs. A somewhat sceptical view echoing these concerns is elaborated by Timmer (2004), among others. However, following Lipton (2006), Boselie, Henson and Weatherspoon (2003), von Braun et al. (2005), and Witsoe (2006), we take a different and more optimistic view of the integration of smallholders in a rapidly transforming food and agricultural sector in light of the empirical evidence reviewed above.

Some specific concerns that require a redefinition of public-private partnerships are sketched below.[25] There is, in fact, a large overlap with IFAD's concerns in the areas of agricultural research, technology and extension, marketing, capacity-building among smallholders and the promotion of producer associations. Specifically, these include the following. The conversion of traditional food systems calls for both technological and organizational innovations. Value-adding logistical services, technologies and activities need to be incorporated into existing supply chains. Contractual exchanges as an alternative to spot market trading hold considerable potential in the context of agro-industrialization and global sourcing. There are, however, a few specific concerns relating to the transparency, reliability and enforceability of such contracts.[26] New variants of contract farming, including mechanisms for technology transfer, risk-sharing and profits, are feasible and might be extended.[27] There is a natural selection among preferred suppliers who are more well equipped to meet the food safety, quality and reliability requirements of supermarket supply chains, but, under certain conditions, extension to a wider and mixed supply base is efficient.

There is a need to build the capacity of smallholders and the commitment among suppliers through monitoring, compliance and extension.[28] Partnerships must be forged among universities and research institutes and between private corporations and public agencies to assess the supply potential of smallholders with a view to sustaining longer-term supply arrangements. Mechanisms that internalize environmental costs into food

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[25] Central to the United Progressive Alliance, the Government's new agricultural policy in India, is the emphasis on public-private partnerships, whereby the State will provide incentives for private corporations to enter agriculture and agriculture-related industries, as well as to coordinate their relationships with farmers. Specific initiatives with this focus are the National Horticulture Mission, the National Agricultural Innovation Project funded by the World Bank, and the United States-India Agriculture Knowledge Initiative. More specifically, through the United Progressive Alliance, the Government is liberalizing agricultural markets and encouraging contract farming as part of a diversification strategy. Contract farming is essentially a privatized version of Government support for agriculture whereby research, extension, credit, procurement and marketing are provided by private corporations. Efforts are being made to amend State agricultural produce marketing acts to allow corporations to procure directly from farmers, thus bypassing licensed traders. In addition, corporations are allowed to establish and run private markets (see Witsoe, 2006).

[26] Some recent field evidence from Punjab, a north Indian State, is revealing. When market prices are high and supplies low, firms buy the entire contracted potato crop. At other times, however, there are frequent rejections on grounds of inferior quality. Unavoidably, the produce is sold on the market, and prices fall. The firms then buy the same produce from the market at a lower price (see Witsoe 2006). In fact, farmers have few options if they are cheated because these contracts are not legally enforceable. Even the model agricultural produce marketing act does not provide for the legal enforceability of such contracts on grounds that are specious.

[27] A shift to higher-value agriculture would yield greater returns, but would also entail greater risks for farmers. Futures markets, crop insurance and weather derivatives are some options. That all these options are in their infancy or patchy in coverage in India is well documented. Only 4 per cent of farmers in India, for example, have crop insurance, while 57 per cent have never heard of it (Witsoe, 2006).

[28] There is a deep-seated distrust of private corporations among the farmers interviewed in Punjab. Many farmers view corporations as no more than sophisticated moneylenders. So, it is necessary to build trust between producers and private corporations (Witsoe 2006).

prices would be beneficial. This is, of course, easier said than done, given the valuation difficulties. Nonetheless, this cannot be a reason for not addressing this concern. Competitive market arrangements, the strengthening of communication networks and a conducive policy environment would help achieve greater efficiency and benefits to consumers.[29] Given that smallholders have low bargaining power, rent extraction by large corporations cannot be ruled out. Alternative marketing channels would enhance the bargaining power of smallholders, as well as producer associations.[30]

In conclusion, contrary to assertions, the demise of smallholders as a consequence of the growth of supermarkets and dramatic changes in the food supply chain is neither likely nor unavoidable. The threats to the expansion of the livelihoods of smallholders and other poor segments in rural areas (for example, agricultural labourers) could be turned into opportunities through mutually beneficial partnerships between supermarkets and smallholders and a macropolicy framework that protects the economic interests of smallholders.

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[29] India, for example, has still not opened up its food retail business to FDI. As a result, competition occurs only among domestic firms (for example, Reliance, Mahindra, ITC, Chambal Agritech).

[30] A recent survey in India, for example, found that a mere 2.2 per cent of farming households had a member belonging to a farmers association, while only 4.8 per cent had a member belonging to a self-help group. So, there is a case for the State to promote such organizations (Witsoe 2006).

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Annex

Model, Estimation and Results

To supplement the main text, details of the specifications, samples of data and estimation strategy used and the regression results obtained are given below. Some graphs provide validation of the model.

Model Specification and Estimation

In line with the insights of the recent literature, the following specification is used:

$$\text{Log (SShare/100-Sshare)}_i = \alpha + \beta_1 \log \text{Income per capita}_i + \beta_2 \log \text{Urbanization}_i + \beta_3 \log \text{(Ratio of income of top 20 per cent/Ratio of income of bottom 20 per cent)}_i + \beta_4 \log \text{Openness}_i + \beta_5 \log \text{Female participation rate}_i + \beta_6 D_1 + \varepsilon_i, \quad (1)$$

where all variables are self-explanatory except the dummy variable. The latter, D_1, takes the value 1 when the share of the urban population exceeds 40 per cent and 0 otherwise. This allows for a threshold effect of the urbanization index.[31] Note that the dependent variable takes a logistic form, in contrast with the unrestricted specification of the dependent variable in Trail (2006).

This equation is estimated by the ordinary least squares method. A robust regression is also carried out to avoid the problem of heteroscedasticity.

The ordinary least squares results are given in table 14A.1. All explanatory variables (except the log of the share of urban population) have significant coefficients with the positive sign. The overall specification is validated by the F-test of the explanatory power of the model.

Even though the Breusch-Pagan test does not show heteroscedasticity, it is worthwhile to check the robustness of the results. The robust regression results are given in table 14A.2. Because these are similar to those in table 14A.1, no additional comment is necessary.

Similar results have been obtained with the smaller sample used by Trail (2006), as shown below in tables 14A.3 and 14A.4.

[31] This calls for additional experimentation. Since this threshold is corroborated by regression analysis, it cannot be rejected as arbitrary.

Table 14A.1: Determinants of the Share of Supermarkets (Ordinary Least Squares)

Source	SS	df	MS		
				Number of obs =	46
				F(6, 39) =	40.26
Model	84.2674812	6	14.0445802	Prob > F =	0.0000
Residual	13.6035896	39	.34880999	R-squared =	0.8610
				Adj R-squared =	0.8396
Total	97.8710709	45	2.17491269	Root MSE =	.5906

lss	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
lper_in	.6854316	.1219148	5.62	0.000	.4388357	.9320276
lurban	-.2623178	.4799627	-0.55	0.588	-1.233134	.7084984
lratio_in	.783286	.192644	4.07	0.000	.3936267	1.172945
lfem_l	2.654487	.7284794	3.64	0.001	1.180998	4.127976
lopen	.7414489	.24744	3.00	0.005	.2409542	1.241944
urban_d40	.9378932	.4411856	2.13	0.040	.045511	1.830275
_cons	-18.45694	2.924353	-6.31	0.000	-24.372	-12.54188

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
chi2(1) = 0.17
Prob > chi2 = 0.6815

Table 14A.2: Determinants of the Share of Supermarkets (Robust Regression)

Robust regression estimates

Number of obs =	46
F(6, 39) =	34.04
Prob > F =	0.0000

lss	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
lper_in	.6617503	.1307487	5.06	0.000	.397286	.9262146
lurban	-.2162446	.5147408	-0.42	0.677	-1.257406	.8249169
lratio_in	.7993126	.206603	3.87	0.000	.3814186	1.217207
lfem_l	2.891223	.781265	3.70	0.001	1.310966	4.471481
lopen	.6480874	.2653695	2.44	0.019	.1113269	1.184848
urban_d40	1.016829	.4731539	2.15	0.038	.0597844	1.973873
_cons	-19.2433	3.136252	-6.14	0.000	-25.58696	-12.89963

Table 14A.3: Determinants of Supermarket Share[a] (Ordinary Least Squares)

Source	SS	df	MS		
				Number of obs =	41
				F(6, 34) =	47.67
Model	85.7215062	6	14.2869177	Prob > F =	0.0000
Residual	10.1893506	34	.299686782	R-squared =	0.8938
				Adj R-squared =	0.8750
Total	95.9108567	40	2.39777142	Root MSE =	.54744

lss	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
lper_in	.7338423	.1345549	5.45	0.000	.4603938	1.007291
lurban	.1850394	.5501724	0.34	0.739	-.9330455	1.303124
lratio_in	.8229657	.1993495	4.13	0.000	.4178388	1.228093
lfem_l	2.16683	.7213922	3.00	0.005	.7007845	3.632875
lopen	.7008444	.2400121	2.92	0.006	.2130812	1.188608
urban_d40	.6729496	.4470818	1.51	0.142	-.23563	1.581529
_cons	-18.77163	2.729252	-6.88	0.000	-24.31814	-13.22512

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
chi2(1) = 0.09
Prob > chi2 = 0.7672

Note: a. This analysis is based on the smaller sample of Trail (2006). Note that two observations have been deleted because the openness index is 0.

Table 14A.4: Determinants of Supermarket Share[a] (Robust Regression)

Robust regression estimates

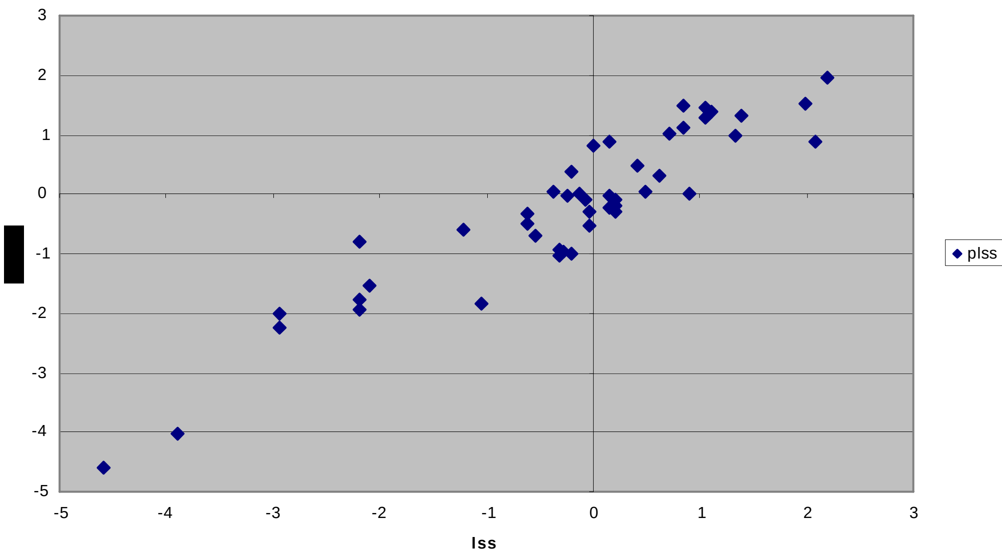
Number of obs = 41
F(6, 34) = 40.31
Prob > F = 0.0000

lss	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lper_in	.6854812	.1429482	4.80	0.000	.3949756	.9759868
lurban	.3091149	.5844909	0.53	0.600	-.8787135	1.496943
lratio_in	.7992624	.2117845	3.77	0.001	.3688646	1.22966
lfem_l	2.38762	.766391	3.12	0.004	.830126	3.945114
lopen	.5763432	.2549835	2.26	0.030	.0581544	1.094532
urban_d40	.7996685	.4749698	1.68	0.101	-.1655862	1.764923
_cons	-19.49688	2.899497	-6.72	0.000	-25.38937	-13.60439

Note: a. This analysis is based on the smaller sample of Trail (2006).
Note that two observations have been deleted because the openness index is 0.

Another approach to modelling validation is to look at the closeness of the predicted values of supermarket shares and the actual values. We do so in figure 1. Here, we have plotted the predicted values (as specified in the regression) against the log of supermarket shares. That there is a strong correspondence — the higher the actual value, the higher the predicted value — is corroborated by the graph

Figure A14.1
Supermarkets - Fitted Versus Actual Dependent variable



15

Privatization and Foreign Direct Investment: The Indian experience

T T Ram Mohan

Both privatisation and foreign direct investment (FDI) have been seen by some policymakers, international agencies and the private sector as key components of India's reform program.

These may not have been as critical to the first round of reforms initiated in 1991 but became important in the second half of the nineties, by which time the growth rate threatened to taper off, as part of 'second generation' reforms. It was felt that for the growth rte to rise from 6 per cent to 7–8 per cent, privatisation and increased FDI would be necessary.

Privatisation has happened only in a small way and in not quite the form that was intended. FDI remained at a low level until a few years ago and has shot up only over the last two years, again, not quite in the form that was intended. Yet, growth surged past 8 per cent in 2003–04 and the Indian economy has not looked back since. It can be said with a measure of confidence today that prospects for growth in the region of 8–9 per cent are no longer contingent on privatisation or FDI happening in a big way. Thus, the Indian growth experience flies in the face of two crucial tenets of the 'Washington consensus'.

What precisely has been India's record on privatisation and FDI? What lessons, if any, are to be learnt from the Indian experience? And what are the future prospects for privatisation and FDI? This chapter attempts to address these questions.

15.1 Privatisation in India: An Overview of the Evolution of Policy

India's privatisation program may be said to have commenced under the Chandrashekhar government with the announcement in the interim budget of 1991–92 that the government would disinvest government equity in public sector undertakings (PSUs). The government spoke of selling up to 20 per cent in such firms, that too to public sector institutional investors.

Subsequently, in 1991, under the government of Narasimha Rao and with Manmohan Singh as finance minister, the disinvestment program became part of an ambitious process of economic reforms covering industry, the external sector, the financial sector and agriculture and also involving a program of macro-economic stabilisation.

Disinvestment was combined with attempts at enterprising restructuring in PSUs. 'Sick' PSUs (firms that have accumulated losses of an order defined by the statute) to the Board for Industrial Finance and Reconstruction that had earlier been responsible for taking decisions on bankrupt firms only in the private sector. The move meant that the government would close down 'sick' SOEs if the BIFR so decreed. In other words, the government was no longer committed to indefinitely sustaining loss-making PSUs.

The Industrial Policy Statement of 1991 cited injection of greater market discipline into PSUs as the objective of disinvestment. Thus, the initial attempt in the reform program was to get PSUs to do better and not to raise resources for government for deployment elsewhere.

In the budget of 1991–92, the government reinstated the upper limit of 20 per cent mentioned by the Chandrasekhar government. It also indicated a preference for disinvesting to public sector financial institutions and to workers of the firms involved. Disinvestment, the budget said, was meant to 'raise resources, encourage wider public participation and promote greater accountability'. So, revenue raising emerged as a new objective but the older objective of improving PSU performance remained in place. Relinquishing government control over PSUs was simply not on the agenda.

In 1993, a committee headed by C Rangarajan, that had been asked to outline a framework for disinvestment presented recommendations that seemed radical at the time. The committee recommended that the government could disinvest up to 49 per cent in industries reserved for the public sector. In cases where the enterprise had a dominant market share or where there were strategic considerations, the government could disinvest up to 74 per cent. In all other cases, the government could disinvest up to 100 per cent.

These proposals did not travel very far. In 1996, the United Front government set up a Disinvestment Commission to advise on disinvestment. A Core Group of government secretaries would refer certain PSUs to the Commission. The Commission would draw up a comprehensive programme of disinvestment over a 5–10 year period for these PSUs. It was for the government to act on the recommendations. The Commission was also asked to advise on such matters as the extent of disinvestment, its mode, and selection of financial advisors.

The Disinvestment Commission formulated a broad approach to disinvestment and also made specific recommendations in respect of 58 out of 72 PSUs referred to it by the Core Group, recommending strategic sale of 36 PSUs, offer of part of equity in 6 PSUs and closure/ sale of assets in respect of 4 PSUs. It recommended no disinvestment in the remaining 12 PSUs.

The Commission broadly distinguished between 'core' and 'non-core' industries. In the 'core' group were industries such as telecommunications, power, petroleum that are capital-intensive and where the market structure could be oligopolistic. The 'core' group also included basic industries in which PSUs had a considerable market presence.

For the 'core' group, the Commission advocated selling government equity up to 49 per cent, that is, the government would retain 51 per cent of equity. In the 'non-core' group, the Commission advocated sale of up to 74 per cent of government equity.

The government's broad approach (in March 1999) was as follows: divide PSUs into strategic (defence, atomic energy and railways) and non-strategic. Strategic PSUs were to be kept outside disinvestment. In non-strategic PSUs, there would be disinvestment upto 26 per cent possible but on a case by case basis. The extent of disinvestment would depend on whether government presence was required to prevent concentration of private power

Under the NDA government headed by Vajpayee, there was an attempt to shift the focus from disinvestment to 'strategic sales' or a transfer of control to private parties. The Commission was disbanded in 1999 and all matters related to privatisation in the industrial sector were handled by a separate Department for Disinvestment (later a Ministry) created in December, 1999. The Commission was reconstituted in July 2001 after the expiry of the term of the first DC in 1999, submitted reports on 41 PSUs including four review cases and was wound up in October 2004.

In 2000–01, the finance minister stated that government equity holdings could go even below 26 per cent. He also announced that a Disinvestment Fund to be created to which proceeds would be transferred. The Fund would be used for social sector investment, revival of PSUs and retirement of public debt. It was hoped that the creation of a dedicated Fund would take the sting out the opposition to disinvestment and strategic sales.

In 1999–2000 and 2002–03, strategic sales took place in nine PSUs, two small PSUs, and in 19 properties of ITDC and HCI, both hotel companies. Most of these transactions generated a huge controversy. They also came in for criticism from an audit carried out by the Controller and Audit General in 2006. Because of the controversy surrounding every transaction, not many strategic sales were effected.

One of the first acts of the UPA government, which assumed power in 2004, was to change tack on privatisation. Navaratna PSUs (the top PSUs), it declared, were not to be privatised, nor profit-making ones. A Board for Reconstruction of Public Enterprises was set up to advise on restructuring and disinvestment. Attempts to carry out disinvestment in some PSUs were stalled. The entire disinvestment process came to a grinding halt.

This was a predictable backlash against the strategic sales program carried out by the previous government. Given that strategic sales had yielded very little by way of revenues, it does appear in retrospect that the hype surrounding strategic sales in the NDA regime was misplaced. Total proceeds from disinvestment in 1991–2005 were Rs 477 bn. Of this Rs 360 bn (75 per cent of total) came from disinvestment, sale of minority shares. Strategic sale yielded only Rs 103 bn (22 per cent) while the balance of Rs 1.3 bn came from sale of minority shares in oil companies to sister PSUs.

Even the figure of Rs 103 bn is an exaggeration because only Rs 64 bn is attributable to sale of government equity. The remaining came from special dividend payments, restructuring of equity prior to disinvestment, employee stock option schemes etc.

Thus, strategic sale took place in short bursts and yielded very little. At the same time, it has hardened opposition to disinvestment because unions fear that disinvestment is only a prelude to privatisation. So strategic sale has harmed the cause of disinvestment.

This is the story for non-financial firms, mostly industrial firms. Disinvestment has taken place in the banking sector but in a different form. The banking statute prohibits sale of government shares in public sector banks (PSBs). In banks, government shareholding has been brought down through fresh issue of shares. Thus, capital raised has gone to banks, not to government, and this has helped strengthen balance sheets. Government shareholding remains above 51 per cent as any lowering below this requires an amendment to law. All but six out of 27 PSBs are now listed.

There are thus crucial differences between privatisation carried out in non-financial firms and that in banks. In the latter, disinvestment has provided a means of recapitalisation and shares have been bought by institutional and retail shareholders in the knowledge that there is no immediate prospect of a transfer of control to private hands.

15.2 Disinvestment versus Strategic Sale

Disinvestment and strategic sale approach the question of privatisation from different perspectives. Disinvestment is premised on the belief that the induction of private shareholders into a government firm, the listing of the firm on the stock exchange and greater autonomy can lead to improvement in firm performance. This is especially true when government firms are exposed to deregulation and competition.

On the other hand, strategic sales or a transfer of control to private hands is urged because of the belief that government firms simply cannot compete in a deregulated

environment and that it is best for government to cash out its shareholdings before firm value falls. In other words, on this view, government ownership cannot possibly conduce to any improvement in performance; it is the private owner alone who can get the best out of the firm's assets. Strategic sale alone are 'genuine' privatisation; disinvestment is only a charade.

These perceptions gained considerable currency under the NDA government and many in India still swear by them. Yet, the prevalence of these beliefs is a matter of some surprise because there is little support for these propositions in the vast literature on privatisation. There is no presumption in the literature that majority ownership or even control must be transferred at one go in privatisation in order for privatisation to yield results.

Many of the studies that document improvements in post-privatisation performance have in their sample firms that had undergone 'partial privatisation' (disinvestment) as well as those that had undergone full privatisation. For instance, in Megginson, Nash and Randeborgh (1994)), the number of partially privatised firms exceeded fully privatised firms in the sample. Partially privatised firms showed improvement in performance, not just fully privatised ones. The story of British privatisation, one of the leading privatisation stories of modern times, is the story of gradual disinvestment eventually leading to transfer of control to private investors.

Megginson et al (2002) have documented the empirical evidence on share issue privatisation (SIP) versus asset sales (the expressions are synonymous with disinvestment and strategic sales respectively). The evidence is that SIP dominates, not strategic sales. SIPs accounted for 63 per cent of all privatisation proceeds, asset sales for 37 per cent.

In the average SIP, 35 per cent of equity sold, in strategic sale 74 per cent. Thus, SIP is about gradual disinvestment. SIPs are the dominant mode of sale in the industrial economies, strategic sale mainly in North America, South America and Africa. (In North America, the total sales is itself quite small).The more developed the capital market and the larger the firm size, the greater is the chance that SIP will be used.

The fact that India has a well developed capital market implies that the case for using SIP is strong. Besides, as Mohan (2005) has argued, strategic or asset sale may not help maximise government revenues. Revenue maximisation requires efficient auctions. Efficient auctions, in turn, require the use of the correct reserve price, a large number of bidders, absence of collusion among bidders, etc.

Even in developed economies, it has been seen that satisfying these conditions wherever government carries out actions is difficult. India's strategic sales sometimes involved just one bidder. Foreign firms were precluded from bidding. Under such conditions, the chances of auctions being efficient and the government maximising revenues are pretty low.

That SIPs work, no matter that government retains majority shareholding, is also borne out by studies on SIP share performance. Megginson, et al (2000) examine the share performance of 158 SIPs in 33 countries over the period 1981–97. They find that returns over one-, three- and five-year periods compare favourably with returns on the domestic, world on US market or portfolios of industry-matched firms.

Disinvestment works. Yet, privatisation tends to be equated with outright transfer of control to private hands. Why? Part of the explanation could be that in Russia and in the transition economies, where financial markets were not well developed and where firms required infusion of capital, strategic sales was the only option. Hundreds of firms were sold to private firms. Such highly publicised sales in recent years may have given rise to the impression that strategic sales are the only meaningful form of privatisation.

15.3 Impact of Disinvestment in India: Non-Financial Firms

We saw earlier that disinvestment or partial privatisation in general has not been an impediment to improvement in firm performance. Does the Indian experience conform to this evidence? Yes, it does.

Mohan (2005) documents the improvement in performance of PSUs in two ways. One is the conventional way of comparing pre- and post-disinvestment performance in 36 firms using six standard financial parameters. In 20 out of 36 firms, there was improvement in three or more parameters. Firms that failed to showed improvement were ones where extraneous factors mattered, such as government control over pricing of petroleum products or lack of budgetary support for capital expenditure. This study went only upto 2000. With economic growth accelerating since 2003–04, there is every possibility that improvement in post-disinvestment performance has been stronger over a longer period.

The other way is to compare performance of PSUs with those of private firms. This does not directly capture the effect of disinvestment. But it does indicate whether state ownership in itself is an impediment to performance. Mohan (2005) compares PSU performance with that of private sector in the aggregate and at the level of seven different sectors. In the period 1989–2000 as a whole, private sector does better. But we when we look at a more recent period, 1995–2000, there is convergence in performance.

This study also compares public and private sector performance in eight sectors using physical quantities of inputs and outputs and applying Data Envelopment Analysis. The measures used are: technical efficiency, Malmquist productivity growth, Tornquist productivity growth, and cost efficiency. The period is 1993–99.

In the aggregate (that is, across all sectors), there no difference in performance. At the sectoral level, private sector does better in three sectors, public sector does better in two sectors, rest no difference. There is thus no clear indication at either level of superior private sector performance. This corroborates the results obtained by using financial measures of performance. Over a period in which disinvestment was taking place and government controlled remained at PSUs, the performance of PSUs was not inferior to that of the private sector.

Gupta (2005) examines the impact of partial privatisation on Indian firms. She finds positive and statistically significant effect on operating performance. She ascribes this improvement to the stock market inducing managerial efficiency. Again, this bears out our contention that introducing market discipline, setting clear commercial objectives, deregulation, the imposition of hard budget constraints and providing greater managerial autonomy have the potential to bring about performance improvements even within the framework of government ownership.

There is one other factor that must be mentioned. Indian PSUs have long had a history of competing with the private sector in India's mixed economy, quite unlike the transition economies where a culture of private entrepreneurship went missing for a long period.

15.4 Disinvestment in Banking Sector

Disinvestment in the banking sector is part of the broader story of banking sector reform which commenced in India in 1992–93. It is useful, before we examine disinvestment in banking, to understand the broader process of reform because this process has departed from the norm elsewhere and has produced commendable results.

On this view, banking sector reform has three elements. One, deregulation of interest rates and credit controls. Two, privatisation of state-owned banks must take place as

government ownership limits the potential for improvements in efficiency. Three, because scale has become important globally, there must be a consolidation in the Indian banking sector.

India has opted for the first but not the other two. Interest rates are today market-determined and many controls over credit have been phased out. However, privatisation has not taken place. The system is still dominated by public sector banks (PSBs). The market share of assets of PSBs is nearly 75 per cent, down from 85 per cent at the start of reforms.

Private banks have been given greater space through the licensing of new private banks and they have increased their market share in the post-reform period at the expense of both PSBs and foreign banks. Foreign banks are restricted in their operations although they have a slightly more liberal regime than before. Consolidation has been confined to private players.

With the system being dominated by PSBs, what has been the impact on efficiency and stability of banking sector reforms? This question is relevant to the issue of privatisation because privatisation is, after all, primarily driven by the consideration that state ownership does not conduce to firm performance. We can look at the figures for PSBs; the conclusions apply to the banking sector as a whole. Mohan (2006) documents these improvements, we cite some of the conclusions therein.

(1) Profitability: As measured by net return on assets, profitability in PSBs rose from -0.4 per cent in 1992–95 to 0.8 per cent in 2005–06, with the peak of 1.12 per cent being achieved in 2003–04. It is not just that Indian banks have achieved a turnaround. They have gone onto become among the most profitable in the world. Internationally, a return of 1 per cent on assets is considered a benchmark of excellence. Table 15.1 provides profitability figures for other banking systems (the figure for India is post-tax; for the others, pre-tax). In 2004, among the industrial economies, only the US banking system did better than the Indian on a pre-tax basis. Among the Asian economies, only Indonesia did better in 2003 (Table 15.2).

(2) Intermediation costs: These costs as a proportion of assets have declined from a high of 2.99 per cent in 1995–96 to 2.06 per cent in 2005–06. It is often said that the intermediation costs in Indian banking are on the higher side. This is not entirely true. Indian banking costs are lower than those of highly profitable banking systems such as those in the US and Australia and higher than those in the UK, Japan and Germany, whose systems are not as profitable. This suggests that looking at the intermediation costs in isolation may not be a sensible thing to do — higher costs are okay, if the business model delivers higher profitability.

(3) Net interest margin (spread): The spread for PSBs has risen from 2.72 per cent in 1992–95 to 2.85 per cent in 2005–06. So, the reduction in spreads that one expects to see in the wake of deregulation has not happened in India. This is bad for borrowers, but as we shall see, it has turned out to be a blessing for banks.

(4) Cost/income ratio: The cost to income ratio has fallen steeply from 73.7 per cent in 1992–93 to 45.1 per cent in 2003–04. Again, internationally a cost to income ratio of below 50 per cent is considered commendable.

(5) Non-performing assets: In the area of non-performing assets again, the PSBs have shown great improvement. The net NPA/ total asset ratio has declined from 3.65 per cent in 1996–97 to 0.72 per cent in 2005–06.

(6) Capital adequacy: At the onset of reforms, the PSBs were struggling to meet the capital adequacy norm of 8 per cent. The capital adequacy has since risen to 12.4 per cent in 2006.

Table 15. 1: Financial indicators of India's Public Sector Banks

Year	*Net income spread*	*Intermediation cost/total assets*	*Net profit/ total assets*	*Cost/ Income*	*Net Non-performing assets/Total assets*
1992-95 (average)	2.72	2.68	-0.40	68.2	NA
1995-96	3.08	2.99	-0.07	66.7	NA
1996-97	3.16	2.88	0.57	64.3	3.65
1997-98	2.91	2.66	0.77	62.7	3.27
1998-99	2.8	2.66	0.42	65.9	3.14
1999-00	2.7	2.53	0.57	63.2	2.94
2000-01	2.86	2.72	0.42	67.0	2.72
2001-02	2.73	2.29	0.72	54.9	2.42
2002-03	2.91	2.25	0.96	47.8	1.93
2003-04	2.98	2.21	1.12	45.1	1.28
2004-05	2.92	2.09	0.89	NA	0.99
2005-06	2.85	2.06	0.82	NA	0.72

Source: RBI's Report on Trend and Progress in Banking; for cost/income ratio Rakesh Mohan (2005)

Table 15.2: Net pre-tax profit of banks (as % of assets)*

	2002	*2003*	*2004*
United States (12)	1.7	2.0	1.99
Canada (5)	0.6	1.0	1.19
Japan (11)	-0.5	0.1	0.29
United Kingdom (9)	1.1	1.2	1.15
Sweden (4)	0.7	0.8	0.98
Germany (9)	0.1	-0.2	0.09
France (7)	0.5	0.6	0.67
Italy (6)	0.5	0.8	1.03
Spain (3)	1.1	1.3	1.17
India (97) **	0.8	1.0	1.13

Notes: Figures in brackets indicate number of major banks included
*Post-tax profit for India
**Pertains to 97 scheduled commercial banks in 2002 and 93 for 2003. Financial year is April-March.

Source : *Report on Trend and Progress of Banking in India, (RBI), 2003-04; BIS Annual Report (2005)*

The above represent impressionistic evidence on the improvement in banking sector performance in the post-reform period. Most of the measures used relate to efficiency. One, the level of non-performing assets, is also a measure of stability because the lower the NPA level, the more stable the banking system. Another measure of stability, capital adequacy, too has shown improvement. The net worth of PSBs was negative at the onset of reforms. Today, capital adequacy in the banking system is over 12 per cent, a figure that compares favourably with the better capitalised banking systems elsewhere.

As Mohan (2006) argues, the improvement in performance in the Indian banking system owes to several factors, including the reduction in operating costs (with virtually the same manpower or a smaller one supporting a substantial increase in volumes through the reform period), a decrease in NPAs and the associated provisions, an increase in spread and, most recently, a substantial expansion in commercial credit. The system also gained from a boost to treasury income arising from falling interest rates but this factor should not be exaggerated: the financial parameters reflect a solid improvement in fundamentals.

Banks are a play on the economy and the banking sector has benefited from the acceleration in growth in the Indian economy over the last four years. It is notable, however, is that academic studies that went even only up to the late 1990s detected a certain convergence in performance between public sector banks and foreign and private banks [Das 1997; Mohan 2002 and Mohan 2003; Mohan and Ray 2003a].

Bhaumik and Dimova (2004) provide further confirmation of this trend. Their results suggest that, although domestic private and foreign banks performed better than public sector banks at the onset of competition in 1995–96, the gap tended to narrow over time. By 1999–2000, the authors found, there was no observable relationship between ownership and performance in the Indian banking industry. The evidence suggests that PSBs were quick to respond to deregulation and competition and that there has been an improving trend in performance through the reform period.

The refusal (or inability, in political terms) to privatise and the predilection for disinvestment must be viewed against this background. That banks have been privatised elsewhere or that foreign bank presence is higher in eastern Europe or in east Asia or Latin America than in India does not a constitute an argument for privatisation or sale of PSBs to foreign banks.

Privatisation and higher foreign bank presence elsewhere are a sequel to banking crises in those places. Banks failed, they had to be recapitalised, the government was unwilling or unable to do so, hence they were privatised. Privatisation sometimes involved sale to foreign banks. In the Indian banking sector, where efficiency and stability have improved as we have seen, such a case for privatisation does not exist. The case for privatisation would be primarily ideological in nature or it would rest on the presumption that further improvements in performance are not feasible.

Twenty one out of 27 PSBs have seen disinvestment thus far. Government shareholding remains above 51 per cent in all cases (Table 15.3). The equity offerings have been hugely successful with many of the issues being oversubscribed several times. The Indian public has come to believe that PSB stocks will deliver.

Disinvestment in banking has taken the form of issue of additional equity to the public, including domestic and foreign institutional investors and domestic retail investors. This is because government sale of equity in PSBs is not permitted by the statutes. Thus, disinvestment in banking has resulted in capital at banks being augmented unlike in the case of non-banking firms where disinvestment involved sale of government equity and yielded revenues to government. Disinvestment thus has contributed to recapitalisation of PSBs.

Mohan (2005) compares pre- and post-disinvestment performance at nine PSBs using three financial parameters. He finds evidence of improvement in performance of PSBs post-disinvestment. But, this comparison is not terribly useful given pre-disinvestment performance was depressed by non-operational factors, such as the imposition of stringent prudential norms and accounting norms.

A more useful measure is a forward-looking indicator of performance, the stock price. Mohan (2005) compares performance of PSB stocks with those of listed stocks of private

banks, without and after adjusting for risk. He finds that PSBs have delivered stock performance comparable not only to the older private sector banks but to the newer private banks. This, incidentally, corroborates evidence he finds of convergence in performance between PSBs and private banks using financial measures.

Table 15.3: Government shareholding in listed PSBs

BANK	*Government shareholding (%)*
Allahabad Bank	55.23
Andhra Bank	51.55
Bank Of Baroda	53.81
Bank Of India	69.47
Bank Of Maharashtra	76.77
Canara Bank	73.17
Corporation Bank	57.17
Dena Bank	51.19
Indian Bank	80.00
Indian Overseas Bank	61.23
Oriental Bank Of Commerce	51.09
Punjab National Bank	57.8
State Bank Of India	59.73
Syndicate Bank	66.47
Uco Bank	74.98
Union Bank Of India	55.43
Vijaya Bank	53.87
State Bank of Travancore	75.00
State Bank of Mysore	92.00
State Bank of Bikaner & Jaipur	75.00

Source: CMIE

Whether we look at the overall story of banking sector improvement or the performance of PSBs before and after disinvestment or the performance of PSBs relative to private banks, the bottom line is the same: government ownership has not been an impediment to performance. There is one caveat, however, that needs to be entered: it could be legitimately contended that the Indian banking sector has not been exposed to the full blast of foreign competition and that the jury is out on the ability to PSBs to take on the full weight of competition from domestic as well as foreign banks.

15.5 Prospects for Privatisation

Prospects for privatisation in the years ahead must be judged against the background outlined in the preceding sections. Market-oriented reforms have come to stay and these have wider acceptance in the country than before. At the same time, resistance to privatisation, at least to a transfer of control to private owners, is fairly strong and it is by no means confined to the trade unions or the Left parties.

There are several considerations that today inform resistance to privatisation, quite apart from the unions' fear of job losses consequent to privatisation. One, the private sector today has much greater space than before and indeed it dominates the non-banking

sectors. In banking itself, the market share of the private sector, while lower than that of the public sector, is expanding rapidly. Given the greatly expanded role of the private sector in the economy, the case for privatisation as a means for injecting private entrepreneurship is weaker than before.

The case for privatisation must rest on the benefits of greater efficiency under private ownership and the deployment of government funds in areas that are the primary responsibility of government, such as social and physical infrastructure. But this case too has been weakened by the course of events in the post-reform period.

As we have seen, performance in the public sector has improved to a point where we can talk of a convergence in performance between the public and private sectors. It is no longer true that PSUs are a drain on the exchequer or that they are a drag on overall economic performance. This is another reason why privatisation will face opposition.

The improvement in government finances in recent years and the emergence of public-private partnerships in infrastructure mean that the fiscal argument for privatisation no longer has the same resonance. The fiscal position of the central government has improved in a way that not many could have foreseen the centre's fiscal deficit should come down to 3 per cent in 2008–09, the level mandated by the Fiscal Responsibility and Management Act.

Paradoxical as it may seem, the stalling of privatisation is turning out to be a big gain for the government. The boom in the stock markets until the end of 2007 (there has been some correction in early 2008) has lifted valuations of public sector stocks as well. In November 2008, a mere 10 per cent sale in PSUs would have yielded the government Rs 880 bn — or nearly 2 per cent of GDP. Indeed, once we factor in potential revenues from privatisation, India's fiscal problems belong truly to the past.

Not only is the fiscal argument for privatisation of PSUs weaker than before, privatisation in important sectors such as oil will face opposition on the ground that these are strategic sectors and that government needs to retail a measure of control over prices of petroleum products, an emotive issue with the electorate.

But, above all, the case for privatisation and the domestic lobby for privatisation has been weakened by the astonishing turnaround in the Indian economy in recent years. With the Indian economy recording an average growth of close to 9 per cent in the last five years, it is hard to argue that the absence of privatisation is a serious drag on the economy.

There remains a case for disinvestment as a means of raising resources for more public investment and also for improving liquidity in PSU stocks. However, so great are the suspicions aroused by the limited amount of strategic sales effected so far that disinvestment is now widely perceived as a route to eventual transfer of control to private parties and this too faces resistance. It is conceivable, however, that disinvestment in non-banking firms will commence under a government that is not dependent on the support of the Left as the present UPA government is.

Privatisation and disinvestment in banking are a quite different kettle of fish. As mentioned earlier, under the present statutes, government shares cannot be sold. Nor can government shareholding decline below 51 per cent. Thirdly, even if government shareholding were permitted to fall below 51 per cent through legislation pending in parliament, the statutes decree that the 'public sector character' of the bank would remain, meaning government would retain control over the bank.

For privatisation to take place, PSBs would have to be covered by the Companies Act in place of the Banking Companies Act. This would be a serious piece of legislation requiring the sort of consensus in parliament that simply does not obtain today.

Further, even if the necessary amendments could be made to the statutes, there is the issue of who could be the possible private owners of PSBs. Under the present definition of ownership, no private party is allowed to hold more than 10 per cent equity in a bank. The central bank insists that ownership be diversified in private banks. This virtually precludes industrial houses from owning banks because such houses would want greater control than is possible through a 10 per cent equity holding. That means the potential owners of PSBs can only be foreign banks. Privatisation would thus entail foreign banks having a dominant presence in Indian banking, which again would be a volatile issue.

For these reasons, it is hard to see privatisation happening in banking in the near future. Even disinvestment seems difficult as any further decline in government shareholding would push such below 51 per cent which is not permitted now. Yet, a limited number of PSBs (around six, by one estimate) would require substantial accretion to capital in order to sustain their growth plans (according to one estimate) Rs 500 bn is required for complying with Basel II norms alone. The government is planning to infuse equity on its own into the leading PSB, State Bank of India. For six other PSBs, there is a proposal on the table to indirectly infuse government equity through state-owned insurance companies or even directly by the government.

The worst outcome for PSBs that lack capital could be that neither privatisation nor disinvestment takes place nor is government able to infuse equity. This would seriously undermine some PSBs' competitiveness after 2009, when foreign banks are to be allowed freer play in the country. Foreign banks have already positioned themselves for a bigger role in retail banking by acquiring equity in non-banking finance companies and brokerages and competition will intensify in the retail banking space which holds the key to PSBs' financial health. It is fair to suggest that while PSUs, in general, are well-positioned to face competition in the years to come, PSBs are not as well placed, despite the improvement in their performance in recent years.

15.6 FDI in India: Post-Reform Record and Future Prospects

We now turn to India's record in FDI. This was signaled as an area of top priority at a time when the savings rate was in the region of 22–3 per cent and India was emerging from a serous balance of payments crisis. If growth was to be accelerated, the investment rate needed to rise to 30 per cent. Given that domestic savings rate was nowhere near that level, a high level of FDI was seen as crucial to raising the investment rate to 30 per cent.

Through the nineties, both academics and policy makers harped on the point that India's record on FDI was nowhere near that of China on FDI, India had been a consistent 'underachiever', although the point was also made that some of the disparity could be attributed to inaccuracies in China's statistics and under-reporting of India's FDI because of lack of conformity with international accounting practices.

The conventional wisdom through most of the reform period has been that FDI has been poor because of various impediments to FDI. Bajpai and Sachs (2000) listed some of these impediments: a restrictive FDI regime, high import tariffs, exit barriers for firms, stringent labour laws, poor infrastructure, centralised decision-making processes and a very limited scale of export processing zones. They also noted that there was considerable divergence amongst the various states in their attitude or receptivity to FDI: the less reform-minded states had not been as conscious of the need to entice FDI. As a result of all this, India was losing out to other countries.

The policy regime for FDI was progressively liberalised through the reform period. The case-by-case approach to FDI approval was replaced by automatic approval for FDI with upto 51 per cent equity in 34 selected industries, subject to certain conditions governing foreign exchange requirements for imports and dividend outflows. Investment

above 51 per cent equity was subject to approval by a specially created Foreign Investment Promotion Board. Thereafter, measures to extend automatic approvals for up to 74 per cent equity and expeditious approvals where automatic approval was not possible were announced.

This has been an ongoing process. Sectoral caps for FDI in infrastructure (eg, civil aviation, telecom) have been enhanced. FDI up to 100 per cent through the RBI's automatic route was permitted for a number of new sectors in 2005–06 such as greenfield airport projects, laying of pipelines, and export trading. FDI caps under the automatic route were enhanced to 100 per cent for coal and lignite mining for captive consumption and setting up infrastructure relating to marketing in petroleum and natural gas sector. These relaxations in the FDI regime apart, other impediments to FDI were also tackled: import tariffs were progressive lowered, there was some progress on removal of exit barriers for firms, infrastructure did show improvement.

For most of the post-reform period, however, despite an improvement in the eco-system for FDI, the response from foreign investors remained lukewarm. Bajpai and Sachs were inclined to attribute this to fundamental weaknesses: lack of competitiveness and poor productivity and skills of Indian labour, among others.

Even these arguments were made, there was nagging doubts about them. For instance, China's FDI regime was said to be even more restrictive in some ways, the Chinese bureaucracy as exasperating, yet this did not keep China from attracting FDI from the west (as distinct from FDI routed through Hong Kong). But the more convincing rebuttal of these arguments comes from the sharp rise in FDI in recent years. In the nineties, FDI averaged $1.9 bn. In 2001–07, the average shot up to $7.0 bn. In 2006–07, India had FDI of $16 bn. Suddenly, the annual target for FDI of $10 bn has ceased to be distant. It is not as if the obstacles to FDI, cited ritualistically through the nineties, have disappeared.

Table 15.4: Gross FDI flows

Year	*Inflow (US$ bn)*
1992–93	0.3
1993–94	0.6
1994–95	1.3
1995–96	2.1
1996–97	2.8
1997–98	3.6
1998–99	2.5
1999–00	2.2
Average	1.9
2000–01	4.0
2001–02	6.1
2002–03	5.0
2003–04	4.7
2004–05	5.7
2005–06	7.8
2006–07	16.0
Average	7.0

Source: Up to 1994–95, Economic Survey; thereafter, RBI

Why did FDI stay low through the nineties? What explains the rise in FDI in recent years? Both these questions need to be answered.

In explaining FDI movements into economies, it is not enough to take into account the determinants of FDI outlined in the literature, some of which have been cited as obstacles to FDI in India. These constitute necessary conditions for FDI but they are not sufficient conditions. It is important to grasp that, increasingly, FDI happens through the M&A route and not through greenfield investment. It follows that FDI flows will be large where opportunities for M&A are available.

The UN's World Investment Report (2006) shows that M&As accounted for nearly 77 per cent of all global FDI inflows in 2005. The share of M&As has been rising in recent years and that of greenfield investment has been declining.

In many developing countries, M&A opportunities are typically related to privatisation of state-owned enterprises. There is thus a close link between FDI and privatisation in developing countries. China's FDI inflows are closely linked with the sale of thousands of small Town and Village Enterprises (TVEs) in effect, China's FDI may be said to substantiate the link between FDI and privatisation.

Whether FDI driven by M&A contributes as much to an economy as greenfield investment has been a subject of debate. Greenfield FDI augments physical capacity and brings fresh capital into a firm. M&As do not do so. They are merely transfers of capital to owners of physical assets. Where M&As take place through share swaps, there is not even augmentation of financial flows into a given country.

Since privatisation in India has taken place overwhelmingly through the issue of shares to financial investors and not through sale of assets to firms, opportunities for FDI to come in through the M&A route have been fewer in India. This, more than many of the other factors conventionally cited, might explain why FDI has been disappointingly low in India compared to that in other developing countries, including China.

But, if this is true, what explains the steep rise in FDI in recent years? Partly, the rise in FDI reflects change in accounting practices. India's FDI figures were understated until 2000–01 because these did not include reinvested equity, as is the international practice.

But the inclusion of reinvested equity in FDI does not drastically change the figures for FDI. The material rise in FDI has, in fact, occurred only in the two most recent years, 2005–06 and 2006–07. The underlying factor is private equity. In these two years, FDI is boosted by private equity flows and venture capital flows, both of which are categorised under FDI (as is true of other statistics such as those provided by WIR).

Official figures for private equity are not available but private agencies estimate private equity in 2006–07 at $8 bn. That would mean that private equity accounted for nearly 50 per cent of FDI. This is much higher than the corresponding figure of 18 per cent for global FDI. mentioned in WIR 2006. Adjusting for this (but not for venture capital for which figures are not available), firm- or MNC-related FDI would be around $8 bn. This is still higher than the figures in previous years but still short of the target of $10 bn which was originally about firm FDI. To compare with figures for the nineties, we would have to adjust for reinvested equity as well for which the figures are not in yet.

It is important to distinguish between firm FDI and FDI through private equity or venture capital. Firm FDI brings technology, export linkages with parent firm and subsidiaries elsewhere and management. Private equity contributes mainly management. Hence while BoP effects of the two types of FDI may be the same, the contribution to domestic economy not the same.

Private equity may be regarded as a subset of FDI through M&As. As in the M&A type of FDI, there is no augmentation of capital or physical capacity to start with. When firm FDI comes in through M&A, there is at least the prospect of transfer of technology

and export linkages. Private equity has a great deal to commend it in terms of managerial or operational efficiency but one would not associate with it many of the spillovers that go with firm FDI.

Besides, private equity has a shorter time horizon — say, 5–7 years — than firm FDI, which is considered virtually permanent in nature. Thus, private equity partakes of the character of portfolio flows — it has less of the stability associated with firm FDI. This again is something that needs to be taken into account by economies seeking to manage volatile capital flows.

It is the services sector that has tended to attract the highest proportion of FDI recent years — in 2005–06, it accounted for $1.8 bn out of the provisional total of $3.3 bn (Table 15.5). This conforms to global trend of services being the principal magnet for FDI, driven by offshoring. Within services, real estate and financial services have been attracting the highest flows. The sector-wise break-up of FDI flows into India for 2006–07 is not available but there are indications that there have been significantly larger flows into real estate.

Table 15.5: Industry-wise flows of FDI (US $ mn)*

	2003–04	*2004–05*	*2005–06 (P)*
Total FDI flows	1462	2320	3358
Fisheries	2	10	28
Mining	18	11	6
Manufacturing	426	924	1,257
Food and Dairy Products	64	183	148
Electricity	90	14	83
Construction	172	209	191
Trade, Hotels & Restaurants	67	22	95
Transport	20	70	66
Financing, Insurance, Real			
Estate & Business Services	206	363	452
Computer services	166	372	770
Educational Services	0	2	4
Research & Scientific Services	1	5	5
Health & Medical Services	15	25	61
Other Services	2	10	49
Others	213	100	143

Notes: *Data in this table exclude FDI inflows under the NRI direct investment route through RBI and inflows due to acquisition of shares under section 6 of FEMA, 1999
P- provisional

Source: RBI Annual Report, 2005–06

Yet higher FDI flows were meant to go into manufacturing and improve export-competitiveness and they were also meant to augment capacity in key infrastructure areas. Thus, while FDI has grown in size in recent years, it has not fulfilled the role that policy-makers had expected.

Looking ahead, there is little reason to believe that the present trend will change in the near future. Firm FDI, which is driven by M&A may not see a huge rise unless privatisation takes off in a big way. Increased M&A activity in the private sector will

provide some scope for increases in FDI. This is particularly true of the financial services sector where foreign firms are positioning themselves for the opening up of the sector post 2009 by buying equity stakes in non-banking finance companies and securities firms. In general, the services sector seems poised to see more of the FDI action.

As with privatisation, so with FDI, it can longer be seriously argued that more FDI is critical either to an increase in the growth rate (through an increase in the savings rate) or to improvement in balance of payments. The savings rate has soared to 35.6 per cent in 2007–08. On the balance of payments front, the problem for policy-makers is dealing with the tidal wave of inflows. The old arguments for stepping up FDI no longer have the same urgency.

It would be unrealistic, therefore, to expect that policy makers will be overly concerned with designing FDI policies with an eye to boosting FDI. Rather, the inclination will be to let FDI take its own course as the attractiveness of India as an investment destination becomes increasingly evident to foreign investors.

15.7 Conclusion

Privatisation and FDI have been high on the priority list of ‘second generation’ reforms intended by India’s policy makers. Neither has happened or happened the way these were intended.

Privatisation has taken the form chiefly of disinvestment in both non-banking and banking sectors. The performance of public sector enterprises has shown improvement consequent to disinvestment and there has been a trend towards convergence in performance between the public and private sectors. With the private sector spreading rapidly in the non-banking area and the role of PSUs shrinking commensurately, privatisation is no longer seen as necessary for affording greater play to private entrepreneurship.

The level of FDI in India remained low through the nineties and indeed until a couple of years. This was widely ascribed to the usual suspects, such as a restrictive FDI regime, poor infrastructure, exit barriers for firms, labour laws, etc. A closer look at the worldwide trend in FDI, however, shows that FDI occurs mainly through M&As rather than greenfield investment. In developing countries, privatisation, which is a form of M&A, has provided the impetus for large inflows of FDI wherever these have occurred. Thus, FDI and privatisation are linked. To the extent that privatisation has not taken place and will not take place, FDI will be constrained.

FDI has increased in recent years largely on account of private equity and it is the services sector that has garnered much of the FDI. Thus, the objective of fostering FDI in manufacturing with its export linkages and productivity benefits for the economy at large has not been realised. Indications are that it is the services sector that will continue to get the lion’s share of FDI. It does not appear that firm FDI will rise sharply in the absence of privatisation.

Going strictly by the objectives that policy makers had set for India with respect to privatisation and FDI, the Indian record has been a disappointment. Yet, growth has hardly been a casualty. India’s economic growth has accelerated to the 8–9 per cent range and a 10 per cent growth rate no longer seems beyond the realm of possibility. As a result, the case for privatisation and FDI as drivers of growth has been weakened.

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16

India's Great Vulnerability: Energy Insecurity

Rakesh Ahuja

The search for energy security is a major driver of change in the world order today. It is a veritable new great game, engaging players across the globe, industrial and industrialising countries, energy suppliers and consumers. It is spawning a web of bilateral and multilateral deals for securing stable access to energy sources in conflict, competition or cooperation with each other.

Next to water shortage, energy deficit is India's greatest economic vulnerability. Its incremental energy demand over the coming decade is projected to be among the highest in the world. This stems from accelerating economic growth, scarcity of domestic energy resources, increasing population and an expanding cohort of high-energy consuming middle class with rising incomes. Populist offerings to the rural population and urban have-nots, who together comprise a majority of the electorate, are adding to the energy crunch. Within a democratic framework, no federal or state government can hope to survive without this bank of votes. Hence, the hybrid pricing models across the country, ranging from free power to a cocktail of subsidies to turning a blind eye to massive electricity thefts.

The galloping oil bill is costing the exchequer over 30 per cent in foreign exchange reserves. There are no prospects of prices falling in the short to medium term. The massive industrialisation in China and India, comprising some 2.5 billion people, is fuelling the competition for scarce resources between traditionally low and high energy user nations.

According to Prime Minister Singh, an investment of around US$130 billion is necessary in the power sector alone to boost generation, upgrade transmission and distribution networks. India needs to install an additional 100,000 MW power generation capacity to meet the goal of 'Power for All' by 2012. That is considered the minimum requirement to sustain the Government's target of 8 per cent annual GDP growth rate.

India is aggressively developing alternative environment-friendly energy sources. Indeed, wind generated installed capacity is more than nuclear power generation. But alternatives to mainstream energy sources can make a significant contribution to the national grid only in the long term. The Asian Development Bank has calculated that while India ranks fifth in the world with hydropower potential of 84000 MW, only 20 per cent has been harvested so far. In effect, India's energy outlook will depend ultimately on how nimbly it navigates on the other two game boards — the hunt for fossil fuels, and for sanction-free access to nuclear technology and fuel.

India and Fossil Fuels — A Snapshot

- India has 17 per cent of the world's population and just 0.8 per cent of known oil and natural gas reserves.
- After US 1st and China 2nd, India is the 5th largest consumer of primary energy in the world. Since 2002, only China has exceeded India's growth rate of energy consumption.
- India is the sixth largest consumer of oil. It will continue to import 70–75 per cent of its oil and gas needs in the foreseeable future.
- India is the third largest consumer of coal. It has coal reserves for the next 70–80 years, but their recovery is constrained by difficult locations, abysmal mining infrastructure, and high ash content of the coal. Consequent thermal inefficiency of power plants and environmental degradation are endemic problems.
- India's current domestic and imported gas supply is 85 million cubic meters per day, well short of demand double that. Gas consumption is expected to rise to 400 million cm a day by 2015 if the economy grows 7–8 per cent per annum.
- A Price Waterhouse report predicts a shortfall of 36000 engineers in the oil & gas sector by 2019. In response, the Government is establishing a centre of excellence, the Institute of Petroleum Technology.
- India is set to emerge as an export hub for refined petroleum products. Current refining capacity is 160 Mt slated to rise to 241 Mt by 2011.
- Conscious of fuel supply chain vulnerabilities, India is establishing strategic reserves of crude oil. The first storage facility for 5 million tonnes will be completed by 2008.

16.1 The Quest for Oil and Gas

India's economic diplomacy is in an overdrive to secure energy assets abroad, pursue long-term LNG contracts and promote trans-national gas pipeline ventures. It has also revamped the legal and regulatory regime to encourage the development of domestic resources. It allows the private sector to play a major role in the sector from exploration in on-shore and off-shore blocks to retailing oil and gas products.

Equity Buy-Outs and Joint Ventures

Marauding Indian public and private sector corporations are on the prowl world-wide for hydrocarbon assets and shares in fuel supply chains. The huge state-owned oil companies now have considerable policy leeway to raise capital for funding acquisitions and joint ventures stretching from Siberia to Sudan. The $1.5 billion stake in Russia's Sakhalin gas fields and the 20 per cent share in the development of Iran's biggest on-shore oilfield (of which China holds 30 percent) are prime examples. Other investment destinations include Yemen, Egypt, Trinidad & Tobago, Venezuela, Angola, Kenya, Uganda, Indonesia, Nigeria and Vietnam.

Reminiscent of the 19th century, when it was a strategic object of desire for Imperial Russia and Victorian England, Central Asia is again a coveted prize for India and the other two foremost consumers of energy — the United States and China. The former

Soviet republics in Central Asia and the Caucuses, as well as Russian Siberia, have become theatres of intense US–Russian, Sino–Japanese and Sino–Indian economic and political rivalry.

Above all, India is in direct competition for energy resources with China as both race to fuel their charging economic growth. Their relationship on the energy front is best described as cooperative competition without conflict. Their hunt for oil and gas traverses most of the globe from Africa, South East Asia and South America to West and Central Asia. Both are in favour of ending what former Indian Minister of Petroleum Aiyer called 'wretched Western dominance' of the sector. They are making joint bids, but also competing for equity stakes, exploration rights and pipeline building contracts.

Overall, India's success has only been modest in face of China's slick and relentless campaigns, replete with political and economic incentives and string-free aid. Last year, China trumped the Indian state-owned oil company, ONGC's US$3.6 billion bid for oil fields in Kazakhstan, largely because of cumbersome and risk-averse decision-making processes in New Delhi. Indian behemoths are in no position to match the speed of Chinese dragons in closing deals — or their blandishments. The U.S. Military's National Defense University estimates that China disburses around US$2.7 billion aid in Africa annually. By the end of 2006, China had invested US$11.7 billion in that continent alone, most of it to oil producers Sudan, Angola and Nigeria.

Pipe Dreams

The emergence of independent Central Asian states in the wake of the Soviet Union's demise, China's growing economic pre-eminence in Greater East Asia, the Sino–Indian détente and Afghanistan's re-entry into regional equations are expanding the scope of trade and other economic links across the entire Eurasian land mass. Roads, railroads, and technologies for transporting oil, gas and hydroelectric power are in the making as the 'new silk roads'.

Spurred by India's energy lust, its reserves of technological skills and labour and by possible collateral benefits of the Indo–Pakistan peace dialogue, several Central and West Asian inspired proposals are on the anvil: gas pipelines to India from Iran via Pakistan (with a possible offshoot to Yunnan), from Myanmar via Bangladesh, undersea pipeline from Oman, and from Turkmenistan via Afghanistan and Pakistan; Kazakhstan oil via the Caspian Sea to Iran, then piped or shipped to India; and transmission of Tajikistan and Kirghizstan hydel-power via the Wakhan corridor in Afghanistan and Pakistan.

Not one of these proposals is anywhere close to implementation. They will remain pipe dreams to prosperity until conflicting political and security interests of the participating nations can be melded into viable joint ventures. Oman has long been under pressure from fellow members in the Organisation of Islamic Conference against concluding a bilateral deal with India. Bangladesh remains reluctant to grant India transit rights in respect of proposals aimed at transporting energy to India's north-eastern states unless it receives concessions pertaining to other (unrelated) bilateral issues.

The Myanmar project is now very unlikely to proceed. The ruling Junta has withdrawn India's 'preferential buyer' status for two off-shore natural gas fields in favour of selling the gas to PetroChina. China will build a pipeline in the opposite direction from Sittwe to Kunming. The decision is blatantly politically motivated; China's support for keeping Myanmar's human rights record of the UN Security Council agenda outweighed the economic incentives of selling the gas to India.

Notable as these examples are, there is no better illustration of the convoluted politics of trans-national energy deals than the proposed Iran–Pakistan–India gas pipeline.

Politics of Pipelines — The Iran/India/Pakistan Project

The US$8 billion trilateral project was conceived in 1989. It has sound commercial basis. It remained victim to India–Pakistan acrimony until bilateral tensions abated in 2003. Much progress has been made since on security, project structure and financing. But it is now stalled on commercial disagreements concerning Iran's insistence on periodic price revisions and Pakistan's demands for higher transit fees. These are real enough issues, but they mask deeper, conflicting political motives and bilateral suspicions.

For India, securing Iranian gas would be a significant step in satisfying its enormous energy appetite. Accordingly, it has made a series of concessions, including de-linking the project from a long-standing demand for Pakistan to reciprocate the MFN status and allow transit rights for trade with Afghanistan. It has also abandoned its insistence on negotiating the project only with Iran, a tactic designed to place responsibility squarely on the latter to guarantee that Pakistan will meet its commitments. Still, it remains wary of the leverage a strategic commodity pipeline would give Pakistan's unpredictable governing polity irrespective of the bilateral and trilateral agreements in place.

For Pakistan, the pipeline would be a bonanza worth well over $1bn in transit fees. However, it remains concerned about making its arch-rival India even stronger economically. Moreover, Pakistan fears that the Iranian pipeline could become something of a slippery slope. It will set a precedent, making it difficult to resist calls by other grasping Central Asian nations for delivery conduits to India. That would undercut Pakistan's strategic leverage as a geographic barrier between India and West and Central Asian states.

For Iran, as the guardian of world's second largest gas reserves, the pipeline would guarantee captive customers over the long-term. The deal would also reaffirm the traditionally strong political and economic links with India. Notably, while India is the third largest Muslim nation, it has, after Iran, also the second largest Shia community in the world.

And then there is the United States, the mover and shaker in the global energy market. It has unequivocally labelled the project a 'bad idea', warning of harsh sanctions against companies doing business with Iran. That would have serious consequences for Indian corporations, which have a strong presence in the Middle East and whose human resources, engineering capabilities and capital would inevitably be required for pipeline construction and other associated activities. American sanctions would have a severe spill-over effect on their commercial credibility and operations elsewhere.

Despite American objections, India and Pakistan are negotiating the project's modalities. They also serve a broader purpose. The Indian Government is facing stiff domestic opposition to the 123 nuclear agreement with the U.S. President Musharraf is under attack from the Islamist lobby, which accuses him of being subservient to America. Continuing bilateral talks on the pipeline imply a disregard for American concerns, providing a buffer against domestic criticism of their policies towards the United States. Hard decisions would be inescapable should an agreement be concluded. Thus India would be forced to choose between the promise of long-term civil nuclear cooperation with the US and the immediate import of gas from Iran. Arguably, it is in the interest of both Pakistan and India *not* to reach an agreement as long as the US–Iran stand-off is not resolved.

Search at Home

The opening of the previously sacrosanct oil and gas sector to private operators, domestic and foreign, is one of the most visible success stories of India's economic reforms. State-owned energy giants continue to march ahead profitably — ironically retarding the

possibility of their privatisation — but they are compelled to compete with home-grown and global majors throughout the sectoral supply chain.

The 1999 New Exploration Licensing Policy was a landmark event under which a steadily increasing number of on-shore and off-shore blocks are being auctioned — 52 in the sixth round in 2006, 80 this year. According to the Indian Oil Ministry, companies that won exploration rights in the previous five rounds discovered the equivalent of 4.88 billion barrels of oil of which at least 30 per cent are likely to lead to actual production.

Cairn Group's oil strike in Rajasthan has advanced to a stage where it is constructing a pipeline to supply crude to refineries in western states. Reliance Industries (RIL) made the world's largest gas discovery of 2002 in the Krishna–Godavari basin in Andhra Pradesh. More recently, it struck sizeable gas reserves in the Kaveri basin on the east coast. RIL has embarked on a massive US$12 billion investment programme of exploration and production, including a 1400 km East-West pipeline as part of its national gas grid. Over the next five years, nearly 50 per cent of India's gas needs are expected to be met through domestic fields. RIL alone expects to contribute one quarter of the nation's additional generating capacity during that period.

16.2 The Quest for Nuclear Energy

The development of nuclear power generation is the most important strand in India's quest for energy security. It has little choice. Known fossil fuel reserves at home are limited. There is a measure of insecurity in relying inordinately on cross-border supplies for a country ocean-locked on three sides and ringed by prickly neighbours on land. Bringing more domestic hydrocarbon and renewable resources on stream will not only take time, but even in the best case scenario will not achieve self-sufficiency. In the context of global warming, 'cleaner' nuclear power clearly has a major role in the country's energy mix: no less than 67 per cent of power generation comes from environmentally damaging coal fired plants.

India and Nuclear Energy — A Snapshot

- India has 17 operating reactors, 7 under construction and 24 proposed by 2020. Respective figures for China are 9, 2 and 32.
- Indian nuclear industry employs around 50000 highly qualified nuclear scientists and technicians. This 'public' figure most likely excludes those employed in the defence establishment.
- Nuclear energy accounts for only 3 per cent (4120 Mw) of India's total energy output. In China, it is 1.8 per cent.
- Projections to 2030 call for nuclear energy share to rise from 3 per cent to 26 per cent to sustain the growth of demand for power.
- Conversely, generation from other sources is projected to fall: coal-fired from 67 per cent to 47 per cent; oil and gas from 20 per cent to 16 per cent; and hydro from 10 per cent to 8 per cent.
- The Government plans to open the nuclear civilian infrastructure to private sector once the deal with the US is 'operationalised'. Indian corporates such as TATA and Reliance have the resources to build nuclear power plants in partnership with global majors.

As early as the 1950s, the visionary Nehru decreed the harnessing of nuclear power for civilian consumption a national priority. However, the role of what he described as the 'new temples' in meeting the newly-independent country's power needs was severely retarded by international sanctions after India's 1974 Pokhran nuclear test. Its subsequent pariah status was set in stone by fatwas issued by western non-proliferation ayatollahs after the 1998 nuclear tests.

On the upside, thirty years of international sanctions and nuclear exile have served as a catalyst for concerted indigenous development of nuclear power stations, R&D centres, and of an impressive infrastructure of industrial facilities servicing both military and civilian nuclear establishments. India has steadfastly maintained its three stage nuclear power programme, based on pressurised heavy water reactors, then fast breeder reactors, and finally on thorium fueled advanced reactors.

However, the Indian nuclear establishment readily acknowledges that existing nuclear stations are nowhere the state-of-art, and that they are operating at no more than 65–70 per cent of their optimal capacity because of fuel (uranium) shortages. While the civilian nuclear power programme could chug along without uranium and up to date technological imports, observers estimate that the share of nuclear energy would, at best, rise from 3 per cent to 10 per cent over the next two decades.

Prime Minister Singh has estimated that sustaining 8 per cent annual GDP growth target would require 30,000 to 40,0000 Mw from the nuclear grid. The Government's immediate goal is to triple nuclear power output to 10,000MW by 2012. It calculates that if the international restrictive nuclear transfer and trade regime were lifted, India could realistically set a target of 20000 Mw or more by 2020.

The US–India Deal

It is against this background that India has entered into the nuclear 'grand bargain' with the United States. The crux of this complex, nuanced deal is that the US will extend 'full' nuclear cooperation to India, enabling it to access nuclear hardware and fuel as if it were a signatory to the Nuclear Non-proliferation Treaty (NPT). In return, India will separate its military programme from civilian nuclear energy facilities and place the latter under tight IAEA safeguards.

The so-called 123 Agreement is integral to building a strategic partnership between the two long-estranged democracies. However, there are several hurdles to cross before India can come out of the nuclear cold. The US Administration has to convince an obdurate Congress to dismantle (or by-pass) the firewalls accreted over the years against nuclear-related dealings with India. It has to persuade the 45-member, consensus-based Nuclear Suppliers Group (NSG) to loosen the supply chain, a process in which China's attitude will be critical. It also has to win over members of the Missile Technology Control Regime (MTCR) to its approach of making India an 'exception' to the NPT.

India too faces a long march. It has to negotiate the complicated Additional Protocol with the International Atomic Energy Agency (IAEA) on country-specific safeguards. But even before it can commence those negotiations, the Singh Government has to build a domestic consensus on the 123 deal. The argumentative Indians are at it again. There is spirited opposition to the nuclear agreement from the Left red-card cadres as well as the environmentalist green-card holders.

However, indications are that the imperatives of achieving energy security will ultimately hold sway. Once all the hurdles are crossed, the immediate benefit for India will be access to uranium ore, which will help achieve optimum operating capacity of the under-performing existing reactors. Meanwhile, other intangible benefits are already

flowing from the American imprimatur designating India as a *de facto* nuclear weapons state.

India has been admitted into the exclusive six-nation International Thermonuclear Energy Reactor project (ITER), a research and development centre designed to demonstrate the scientific and technical feasibility of fusion power. Membership of the US-led Generation IV International Forum (GIF) is very much on the cards. This eleven-member consortium is investigating innovative nuclear energy systems with the aim of developing the next generation of nuclear reactors. There are also good prospects of India being admitted into the Global Nuclear Energy Partnership (GNEP), which addresses the development of advanced technologies for peaceful uses of nuclear energy.

Membership of these diverse nuclear-related clubs and the consequent association with new frontiers of nuclear technology will be invaluable to India for advancing its nuclear programme. (Of course, that is precisely why several governments and lobbies world-wide strongly oppose the deal.) However, it is not just one-way traffic. Other club members have expectations of gaining technical results of India's long and laborious research and development efforts, albeit often unrealised, and to its scientific and technical manpower. The significance of this latter aspect should not be underestimated. Since the Three-Mile Island accident in 1979, civilian nuclear power has been on a back burner in most western countries, leading to a generational gap in education and training in nuclear technology. In contrast, a strong base of technical skills has been coalescing in India since the 1970s.

16.3 The Australian Connection

India faces a stark dilemma. When ratified, the 123 Agreement will open the gateway to most of the state-of -the art-nuclear technology it can afford. However, that would serve little purpose without ready and reliable access to uranium fuel, which, in turn, will depend on the NSG. Australia's attitude at that forum will be critical. Belying its middle power status, Australia has a disproportionately strong voice internationally on matters nuclear, underpinned by its 40 per cent of the world's reserves of *low cost* uranium.

After decades of vociferous domestic debate in Australia on the rights and wrongs of nuclear power, a bipartisan political consensus has emerged on lifting restrictions on uranium industry's development to allow greater yellowcake exports. It is intended to abandon the 25 year old policy against commissioning new uranium mines, which made the industry not only a sacred cow, but with three operating mines already supplying 22 per cent of the global output, a half pregnant one.

The Australian Government has welcomed the US–India deal. Following a review of relations with India, it has also foreshadowed the opening of Australia's yellow paddock to India. The sale will be subject to the same safeguards as imposed on China under the Nuclear Transfer and Cooperation Agreement. Despite widespread reservations in the polity about selling uranium to a country, which has refused to subscribe to the Holy Grail, the NPT, the government's decision reflects several considerations relevant to Australia's long-term economic interests in the Indian market.

One, there can be no sustainable 'planetary' game plan for tackling global warming without addressing the needs of China and India, which are two of the world's largest emitters of greenhouse gases. Under the froth and bubble of the debate on combating global warming, there is a glaring contradiction between identifying India as a major contributor to the greenhouse gas emissions and denying it the means to deal with that problem. That is consistent with the stated objectives of the Asia–Pacific Partnership on

Climate (AP6), including Australia and India, which approves the option of nuclear energy to counter climate change.

Two, Australia can hardly ignore the determination of its ally, the US, to forge a strategic partnership with India, one objective of which is to place it on no less a footing than China for accessing nuclear supplies. This reflects its apprehensions about China's looming might for the balance of power in Asia.

Of course, the US is also driven by the commercial charms of a multiplying, 300 million strong, Indian middle class. American high-tech corporations, in particular Westinghouse and GE — and Russian, British, French and German companies — are salivating at the prospect of selling nuclear hardware to India. There is little doubt that as soon as the decks of the 123 Agreement are cleared, India will embark on a buying spree, starting with 1000 mw light reactors.

Three, Australia has a growing economic stake in India, its fastest growing export market since 2002. Provided Australia is flexible on uranium sales to a non-NPT signatory, its economic and political leverage will increase. But that would be seriously jeopardised if it were any less responsive to India's energy security needs than to China's.

Four, the argument that divvying up the yellow cake for sale to India would undermine the non-proliferation regime holds little water. In contrast to China's less than transparent record on proliferation, India has an impeccable non-proliferation record. Indeed, that fact underpins the US case for the nuclear accord with India.

Five, it is in Australia's (and western alliance's) interest to bring 'oiloholic' India into the nuclear fold to provide sound alternatives to its debilitating dependence on, and strategic compromises with, problematic countries such as Iran. A nuclear energy option would certainly diminish the attractiveness of the Iranian pipeline or other energy projects perceived as inimical to western interests. Besides, in the long-term, a decrease in demand for conventional energy resources has the potential to reduce price pressures at the oil pump and the burden on the Australian economy.

Finally, Australia is in a driving seat for harvesting hundreds of million dollars annually from uranium exports to India. It has a more mature technological capacity for 'absorbing' greater quantities of Australian uranium than, say, China. But Australia has no monopoly in the uranium market. With reserves around half that of Australia, Canada is the world's largest exporter of uranium. Other potential sellers to India include Kazakhstan, Namibia, Niger, Russia and Uzbekistan.

Australia's response to satisfying India's energy insecurity will be the single most decisive issue in determining whether its long-term business interests have a place on the Indian high table to partake what an up and coming economic superpower has to offer. For India too, this issue represents something of a litmus test of Australia's commitment to developing a substantive bilateral relationship.

16.4 Conclusion

One irony says a great deal about India's energy prospects. Indian companies are competing worldwide from Indonesia to Nigeria for contracts to build power plants and construct pipelines. Clearly, it is not the lack of capital or technological skills, which is retarding India's quest for energy self-sufficiency; it is the lack of conventional and nuclear resources to which they can be applied.

India faces one incontrovertible fact. Geo-political and economic constraints make quick fixes by jostling on the fossil fuel game board an unrealistic option. It is also self-evident that whatever successes India might have in bringing conventional domestic

resources on stream, including alternative fuels, it can not achieve self-sufficiency in the near future. India's reliance on importing 75 per cent of its primary energy needs, rising oil and gas prices and a vociferous domestic green lobby leave it little choice but to adopt the nuclear option to feed its booming economy. The landmark nuclear Agreement with the United States is on the point of providing the gateway to an exponential leap on that front.

Arguably, apart from its leading global role in the heyday of the non-alignment movement, India has never engaged in geo-political plays as intensely as it is now doing to tap energy resources. Indian intelligentsia prides itself on having learnt the lessons of the Great Game as Kipling described the politics of regional balance of power in the 19th century. But a new great game on a much wider scale and with very different objectives is now in progress. India's energy security will depend on how successfully it employs imaginative, multi-dimensional resource diplomacy to gain access to diversified energy resources from across the globe.

17

Economic Determinants of Newsprint Consumption in India: A Time Series Analysis

Raghbendra Jha and U.N. Bhati[*]

17.1 Introduction

As India celebrates 60 years of its independence, it is appropriate to recall that the press in India was among the key role players in India's successful struggle for independence. Since independence, the press has been helping to advance several objectives, including nationwide democracy and good governance. In turn, aspiration of the people of India for socio-economic development, a stronger democracy and better governance has ensured continued freedom of the press itself. Over the years, the press has grown enormously in both depth and spread. Although the story of the growth of the press in India is fascinating we are interested here in the core raw material used by the press — newsprint — a category of paper used for printing newspapers.

The share of newsprint in the total cost of production of newspapers is likely to vary across newspapers and over time. However, the fact that this share for the *Hindustan Times* group of newspapers in India is currently around 40 to 50 per cent shows that newsprint is a major material input into production of newspapers (HT Media Ltd, 2006). One might therefore expect that there would exist in the public domain quantitative studies that would have rigorously analysed economic determinants of consumption of newsprint in India. However, our literature search reveals that there are no such studies. It is possible that our search has not been exhaustive. Notwithstanding, we expect this study to be of interest to India's print media; newsprint producers, exporters and importers; policy makers; and market analysts and economists who need estimates of responsiveness (elasticity) of newsprint consumption to changes in economic determinants. We also harbour a hope that this study encourages further research on the subject.

The next section of the study provides an overview of production, trade and consumption of newsprint in India. With this background, subsequent sections present a review of literature, details of estimation procedure and results of a time series econometric model of consumption of newsprint, forecasts of newsprint consumption, and, finally, the concluding comments.

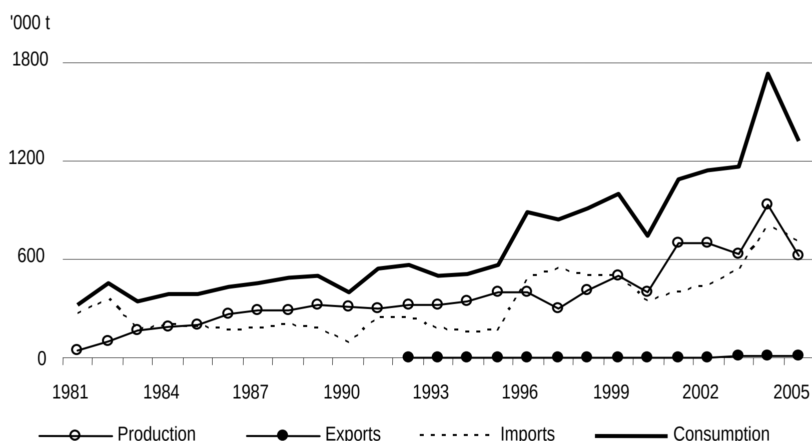
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17.2 Production, Trade and Consumption of Newsprint

One of the reasons for the paucity of analyses of newsprint consumption in India is inadequacy of data availability. For this study, we could get consistent data on all variables only for the 25-year period of 1981 to 2005. Thus, while 1981-2005 is the core period, at places the study deals with sub-periods and selected years of the period, and occasionally extends to years outside the period.

Over the 25 years, production, imports, exports and consumption of newsprint in India have all had rising trends (Figure 17.1). Computed trend growth rates indicated that the average annual growth rate of production was 7.6 per cent, imports 5.4 per cent and consumption 6 per cent. In the first half of the period, the consumption growth rate was 3.8 per cent a year; the rate more than doubled to 8.8 per cent in the second half, indicating acceleration in newsprint consumption by India's newspapers.

Figure 17.1: Production, Exports, Imports and Consumption of Newsprint, India



Source: FAO (2007).

Newsprint is an essential input into production of printed newspapers. Hence, to understand the growth in consumption of newsprint, it is useful to look at the development of printed newspapers in India. Table 17.1 shows how the numbers of newspapers, their circulation and the languages in which they are published have all increased over time. The rise in circulation of newspapers from 54 copies per 1000 persons in 1976 to 164 copies in 2005–06 summarise the changes. The statistics confirm that printed newspapers in India have grown in both depth and spread. Factors contributing to this include the increases in literacy, income and the people's choice to acquire knowledge and information from newspapers. The increased demand for and supply of newspapers in India has led to growth in its demand for newsprint.

Turning to supply of newsprint, there are two sources of it: domestic newsprint manufacturing industry and imports. We deal with these sources in turn, based mainly on the information from FAO (2007), Registrar of Newspapers for India (2007), Central Pulp and Paper Research Institute (2005) and Jaakko Poyry (2002). Prior to 1956, India

did not have any newsprint mill. Hence, imports alone met the demand for newsprint in India. It was only in early 1956 that the first mill, owned by government, came to produce newsprint in India. Since then additional government-owned and many private mills had sprung up. At present, the newsprint manufacturing industry consists of 73 mills. Five of the mills are ‘large’, and these account for about one-third of the total installed newsprint capacity in India. However, by current international trends it is debatable whether all five mills can be regarded as ‘large.’ The industry, consisting of many small mills that use obsolete technology and machines, is further characterised by relatively high costs of papermaking fibre, energy and transport. In addition, the quality of newsprint produced tends to be poor. In a nutshell, India’s newsprint manufacturers, particularly its medium to small mills, have difficulty competing against imports. The problem is however not confined to newsprint industry; it extends to India’s several manufacturing industries — a lingering result of government policies in the past (Kochhar et al., 2006). As a result of the introduction of economic liberalisation policies and other developments since early 1990s, the industry situation is improving but not fast enough to keep pace with the rising demand for newsprint by the rapidly expanding newspaper industry.

Table 17.1: The Press in India: Key Statistics

	Newspapers [a]	*Circulation* [b]	*Languages* [c]
	No. of titles	*No. of copies*	*No.*
1976	13 320	34 075 000	68
1986	23 616	64 051 000	92
1996	42 388	89 434 000	100
2006[d]	62 483	180 738 611	123

Notes: [a] Newspapers are printed (including cyclostyled) periodical works containing public news or comments on public news, as at 31 March. Their periodicity can be daily, tri- and bi-weekly, weekly, fortnightly, monthly and other.
[b] Circulation is average number of copies sold and distributed free per publishing day. The circulation numbers may be underestimates because not all newspapers submit their reports by due dates.
[c] Includes English, main languages recognised in the Constitution of Republic India and other languages and dialects of India.
[d] The year ending 31 March. Other years are calendar years.

Source: Registrar of Newspapers for India (2007).

Notwithstanding the problem of competing against newsprint imports, India has been exporting newsprint on a regular basis since early 1990s. But the quantities have been relatively tiny. In contrast, imports have been huge. Not surprisingly, the gap between imports and exports has widened over time (Figure 171).

India turned into a significant net importer of newsprint in 2005, when it was the world’s fifth largest importer of newsprint. The top four world importers in descending order were the United States of America, the United Kingdom, Germany and China. Leading suppliers of newsprint to India were Canada and Russia, together accounting for 60–70 per cent of India’s total imports.

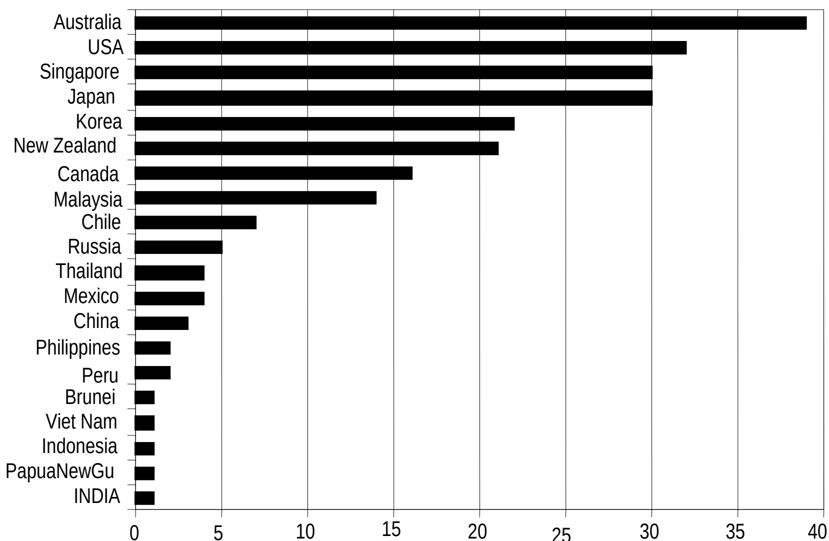
Tariff duty on imports of newsprint (tariff item 4801) into India has been lower than that on other categories of paper. During the second half of 1995, the duty on newsprint

imports was 10 per cent and, at present, it is zero. At the same time, highly regulated and cumbersome bureaucratic procedures that governed the imports have now been removed and/ or greatly simplified. The reduction in tariff duty and the simplified import procedures would have had the effect of lowering the price of imported newsprint and the related transaction costs for newspaper industry. These changes would have also created more competition in the market place for India's domestic newsprint manufacturing industry which, in the long run, may benefit it.

In 2005, India's net imports satisfied 53 per cent of its total consumption of 1.3 million tonnes of newsprint. To put India's newsprint consumption in perspective, Australia's newsprint consumption for the same year was 0.8 million tonne and Korea's 1.0 million tonne. Continuing with international comparison: India was the third largest consumer of newsprint in Asia, with Japan the second largest at 3.9 million tonnes and China the largest at 4.1 million tonnes.

On per capita basis however, India newsprint demand presents a very different picture. Figure 17.2 shows average consumption of newsprint per 1000 persons in India and in member countries of the Asia Pacific Economic Cooperation (APEC) — a regional group of the developing and the developed economies. It is clear from the figure that per capita consumption in India was among the lowest, whereas it was highest in Australia and USA.

Figure 17.2: Annual Consumption of Newsprint, 2005



Source: FAO (2007).

The low per capita consumption in India signals that if India — the second most populous country in the world — sustains its fast pace of socio-economic development, its newspaper industry will grow further, inducing a greater consumption of newsprint. In that event, India will emerge as a major consumer of newsprint on per capita and aggregate bases. In contrast, since the late 1980s, consumption of newsprint in USA has been falling in both aggregate and per capita terms and, from 2000, the fall has

accelerated. Hetemaki and Obersteiner (2002) explain that the fall in newsprint consumption in USA was on account of the decline in circulation of newspapers there. (The decline in circulation is due partly to electronic media replacing the print media.) Notwithstanding this, in 2005, consumption of newsprint per 1000 persons in USA averaged 32 tonnes and in India only 1 tonne. It suggests enormous scope exists in India for increase in its newsprint consumption and underscores the importance of understanding the determinants of newsprint demand. This paper seeks to address this issue.

As explained in Bhati and Jha (2006) India's consumption and imports of paper and paperboard, including newsprint, are likely to rise significantly in the future. In addition, India is also highly likely to significantly increase its imports of papermaking fibres such as pulp, recovered paper and pulpwood.

17.3 Review of Literature and the Approach to Modelling

Although we did not find any time series studies on consumption of newsprint in India, there were several studies on other countries. Examples of these include Edquist and Morris (1985) and Love, Yainshet and Grist (1999) on Australia; Baudin and Westlund (1985), Zhang and Buongiorno (1997) and Hetemaki and Obersteiner (2002) on USA; and Baudin and Lundberg (1987) and Simangunsong and Buongiorno (2001) on selected developed and developing countries, and Chas-Amil and Buongiorno (2000) on the European Union and its member countries. Authors such as Chas-Amil and Buongiorno have noted that they were compelled to using pooled cross-sections of countries' time-series data to overcome the limitations that short time series data for individual countries impose on obtaining dependable estimates of parameters of consumption functions.

Although the theoretical approach to modelling the consumption of newsprint varies across these studies, production theory provides the foundation for many of them. The theory starts on the basis that newsprint is one of the inputs in producing printed newspapers, and that the newspapers themselves directly or indirectly become inputs into production of final goods and services in the economy. The approach begins with the simplifying assumptions that a firm operates in a competitive market and that the firm uses only two factors of production whose prices are w_1 and w_2, and that objective of the firm is to minimise its total cost for production, given output level y. With x_1 and x_2 as the quantities of the two inputs, and assuming a Cobb-Douglas production function, the cost minimisation problem is:

$$\min_{x_1, x_2} (w_1 x_1 + w_2 x_2)$$

subject to $\alpha x_1^a x_2^b = y$.

As shown in Varian (1992, pp. 54-55), the cost minimisation process leads to the derived input demand for x_i as:

$$x_i = x_i(w_1, w_2, y).$$

Thus, the input quantity x_i consumed by the firm is a function of the input prices (w_1 and w_2) and the chosen level of output (y). Derived demand coefficient of own price (w_1) has a negative sign and the coefficients of substitute input price (w_2) and output (y) have positive signs. The theory applies to a firm, but when aggregated over all firms it is assumed to apply to an industry or to the output sector of an economy. Based on this production theoretic approach and its simplifying but plausible assumptions, the econometric studies have obtained theoretically consistent and statistically meaningful results. In accord with

those studies, we visualise the derived consumption of newsprint (x_1) as a function of real price of newsprint (w_1) and real gross domestic product, a proxy for output (y).[1]

Data

Consumption of newsprint is in thousand tonnes by calendar years; derived by adding India's annual newsprint production and imports and then deducting from it the exports. Because data on stocks or inventories of newsprint were not available for India, as is the case for many countries, derivation of annual consumption could not take into account changes in stocks. Hence, the derived consumption represents apparent consumption. Source of the data is FAO (2007).

Price of newsprint is an index of real wholesale price of newsprint, with base year: 2000 = 100. We derived it by deflating India's nominal wholesale price index (WPI) for newsprint (base: fiscal year, ending 31 March 1994 = 100) with consumer price index (CPI) for India with base year: 2000 = 100. Sources of WPI: website of the Office of Economic Advisor (OEA) to Government of India [<http://eaindustry.nic.in/>, accessed 10 May 2007] and data from OEA receive by post on 11 April 2007. Source for the CPI is the website of International Finance Statistics of International Monetary Fund [<http://www.imf.org/>, accessed 7 June 2007].

Real gross domestic product (GDP) of India is in constant prices (base year: 1999 = 100) in billion Indian rupees, by calendar years. Source: International Finance Statistics of International Monetary Fund [website <http://www.imf.org/>, accessed 7 June 2007].

We noted earlier that the data on nominal wholesale prices index of newsprint were by fiscal years of India (year ending 31 March), whereas other data were by calendar years. Hence, we took the recourse to treating the nearest fiscal and calendar years as being equivalent. For example, we treated the fiscal 2004-05 as equivalent to calendar 2004. The equivalence has up to nine common months between the fiscal and calendar years. It is not the ideal situation but under the circumstances, it was the only feasible solution.

17.4 Estimation of the Consumption Function for Newsprint

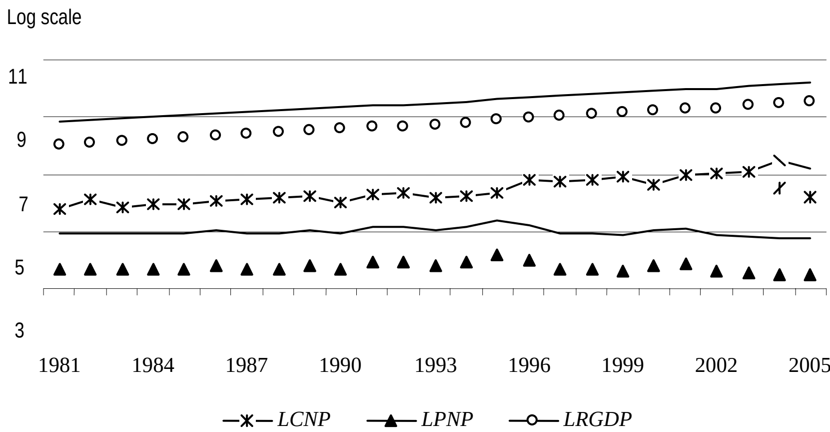
Because of data limitations, in particular short data series and the non-availability of data on prices of substitutes for newsprint, we chose only three variables for the analysis. In common with many studies cited earlier, the three variables — in natural logarithms — were: real wholesale of price index of newsprint (*LPNP*), real GDP (*LRGD*) and consumption of newsprint (*LCNP*). Figure 17.3 presents natural log values of these variables from 1981 to 2005.

Using econometrics software Microfit (version 4, 1997) for analysis, the augmented Dickey Fuller (ADF) tests revealed all three variables are integrated of order 1. Hence, use of the ordinary least squares would give spurious results. The situation called for use of the time series cointegration methods. Johansen cointegration estimation revealed the presence of one cointegrating variable among the three variables, using both the maximum eigenvalue of the stochastic matrix (test statistic of 34.01 against the 95 per cent critical value of 24.35) and the trace of the stochastic matrix (test statistic of 44.33 against the 95 per cent critical value of 39.33). This evidence shows the existence of one cointegrating vector among the three variables. The estimated cointegrating vector in normalised form is:

$$-1.000*LPNP + 8.3833*LRGDP - 3.3093*LCNP = 0.$$

[1] Data on prices for other categories of paper are not available on a consistent basis for the period 1981–2005.

Figure17.3: Consumption of newsprint (LCNP), real wholesale price of newsprint (LPNP) and real GDP (LRGDP), India, natural logarithm



This reveals the existence of a long run consumption function for newsprint in India, with a long-term price elasticity of -0.30 and a long run GDP elasticity of 2.53. The restrictions, that the coefficients of *LPNP*, *LRGDP* and *LCNP* are zero, are rejected by non-parametric chi-squared tests at 1.4 per cent, 5.3 per cent and 0.00 per cent, respectively.[2]

The analysis has identified a robust consumption function for newsprint in India. All coefficients have the correct signs and are statistically highly significant. The Appendix reports on the short-run dynamics of this relationship as determined by the error correction model.

Elasticities

To put our estimates of the price and GDP elasticities of newsprint consumption in perspective, in Table 17.2 we compare them with the elasticities reported by other studies. It is evident from the table that our estimate of long run price elasticity of -0.3 for India is broadly similar to the price elasticities reported by the other studies for other countries or groups of countries. However, our long run estimate of GDP elasticity of 2.53 for India is distinctly high relative to those reported by the other studies. The question arises, why is the GDP elasticity so high for India? To explain it we note that first, the levels of both per capita newsprint consumption and GDP are very low in India. Second, we draw attention to the study Baudin and Lundberg (1987), which found that the elasticity tends to be high when GDP per capita is low (see Table 17.2). These facts partly explain why the GDP elasticity is so high for India. Additional plausible explanations may include differences between our and the other studies in their estimation method and time period.

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[2] Short run dynamics of the model, as captured in Error Correction Models for the three variables can be obtained from the authors.

Table 17.2: Estimates of newsprint consumption elasticities with respect to newsprint price and GDP

Authors	*Price elasticity*	*GDP elasticity*	*Comments*
This study (2007)	–0.30 LR	2.53 LR	India; 1981–2005; Johansen cointegration estimation method
Hetemaki & Obersteiner (2002: 23)	–0.49 SR –0.58 LR	0.70 SR 0.84 LR	USA; 1971–1987; elasticities for the 'best' of the several models
Simangunsong & Buongiorno (2001, p. 165, 167)	–0.13 SR –0.29 LR	0.50 SR 1.08 LR	Fifty developed & developing countries for newsprint; 1973–1997; LSDV time series dynamic model
Chas-Amil & Buongiorno (2000: 993, 996)	–0.30 SR –0.48 LR	0.39 SR 0.63 LR	European countries; 1969-1992; LSDV time-series model
Zhang & Buongiorno (1997: 372)	–0.22	NA	USA, 1960-1991; a two-stage AIDS demand model for communications media (stage 1) & for printed materials, computers, TV & radios (stage 2)
Baudin & Lundberg (1987:. 192)	–0.278 LR	Elasticity, by GDP per capita income in US$: <2 000–0.975 2 000–4 000 0.923 4 000–9 000 0.821 >9 000–0.878	Fifty-six developed & developing countries for newsprint; 1961–1981; pooled cross-section time-series models

SR, Short run. LR, Long run. NA, not available. LSDV, Least squares (country) dummy variable.

Indicative forecasts

For forecasting consumption of newsprint in India, we first reviewed recent trends in and short to medium term outlook for newsprint prices in global and Indian markets and for GDP growth rate for India. Based on the review, and using 2005 as the base year, we chose two alternative annual growth rates of zero per cent and 1.5 per cent for *LPNP* for the forecast period 2006 to 2010. Similarly, we chose two annual growth rates of 7.5 per cent and 9 per cent for *LRGDP*. The two alternative growth rates each for *LPNP* and *RGDP* represent plausible low and high average annual levels for the forecast period. Thus, the selected ranges in *LPNP* and *RGDP* encompass the likely value of the two variables for India. The combination of the two assumed levels of *LPNP* growth rate with the two *RGDP* growth rates created four scenarios. Using the estimated cointegration equation and 2005 as the base year, we calculated indicative forecasts of annual consumption of newsprint from 2006 to 2010 for each scenario. The forecasts thus derived are in Table 17.3. Note that the first row of the table represents actual newsprint consumption for the base year 2005.

To put the forecasts in perspective, we now review the forecasts made by other studies. At the outset, we note that except for Zhu et al. (1999), other studies and sources have not given details of the methodology used by them. In addition, none of the studies has used cointegration methodology. With these comments, we note that Zhu et al. (1999, p. 101) forecast newsprint consumption in India at 1.0 million tonne in 2010. With the benefit of

hindsight, we see the forecast of 1.0 million tonne in 2010 as an underestimate, because actual consumption at 1.3 million tonnes in 2005 has already exceeded the forecast five years earlier. Jaakko Poyry (2002, p. 86) forecast newsprint consumption at 1.5 million tonnes in 2010. Jaakko Poyry also forecast that consumption growth rate would be 5 per cent a year beyond 2000. Again with the benefit of hindsight, we note that average growth rate of actual consumption, at least during the 2000–-2005 part of 'beyond 2000', has been 12 per cent a year vis-à-vis their forecast of 5 per cent a year. Like Jaakko Poyry, Central Pulp and Paper Research Institute (CPPRI) of India (2005: 145) also forecast newsprint consumption at 1.5 million tonnes in 2010. With actual consumption already at 1.3 million tonnes in 2005, the forecasts by both Jaakko Poyry and CPPRI are, in our opinion, underestimates. Quoting Norske Skog, the world's biggest newsprint maker, a reporter for Bloomberg wrote that demand for newsprint in India would grow at 5.6 per cent a year to 2019 (Roy 2006). In September 2005, Gurumurthy (2005), a reporter for *The Hindu* newspaper, quoted Mr Raji Philip, Chairman of Hindustan Paper Corporation and President of the Newsprint Manufacturers Association of India, as saying that newsprint consumption in India was expected to be 2.0 million tonnes within two years, that is, by late 2007. Assuming the media has quoted Mr Philip correctly, we note that his forecast of consumption at 2.0 million tonnes is identical to our forecast of 1.9 to 2.0 million tonnes for 2007. On this basis, our forecasts appear reasonable. Of course, only time will tell how reasonable our forecasts are to actual consumption in year 2010.

Table 17.3: Indicative Forecasts of Consumption of Newsprint in India, 2006–2010

	Average annual growth rate of real price of newsprint 1.5%		*Average annual growth rate of real price of newsprint 0%*	
	Average annual growth rate of real GDP 7.5%	*Average annual growth rate of real GDP 9%*	*Average annual growth rate of real GDP 7.5%*	*Average annual growth rate of real GDP 9%*
	'000 tonnes	*'000 tonnes*	*'000 tonnes*	*'000 tonnes*
2005 (Actual)	*1 324*	*1 324*	*1 324*	*1 324*
2006	1 570	1 620	1 576	1 626
2007	1 860	1 982	1 875	1 996
2008	2 205	2 424	2 230	2 451
2009	2 614	2 965	2 654	3 009
2010	3 098	3 627	3 157	3 694
(Average annual growth rate of consumption: 2005–2010)	(18.6%)	(22.3%)	(19.0%)	(22.8%)

17.5 Concluding Comments

Our study modelled the consumption of newsprint in India using robust time series methods. The study found that the consumption of newsprint and its two determinants — real price of newsprint and real gross domestic product — were non-stationary; hence, modelling of this consumption function must use cointegration methods. Johansen estimation revealed a robust consumption function for newsprint, with meaningful price

and gross domestic product elasticities. Short-run dynamics of the three variables were also discussed.

Although the study has estimated a robust consumption function for newsprint in India, the results are subject to a few limitations. First, the assumptions that underlie the cost-minimisation production theoretic approach to modelling consumption function may not adequately reflect the complex real world. Second, the mismatch between one of the data series being for fiscal years and the other two for calendar years may have affected the results. Third, as complete time series data set was available for 25 years only, our model is based on a relatively short time series, which may have also affected the estimates.

Based on the estimated model and specific assumptions about future prices of newsprint and economic growth rates, we forecast that consumption of newsprint in India could be 3.1 to 3.7 million tonnes by 2010. Parts of the forecasts are in line with the forecast made by a prominent insider of India's newsprint manufacturing industry. Nonetheless, our forecasts must be treated as indicative rather than definitive. This is because they are based on assumed future values of economic determinants, and the unfolding of economic and non-economic factors may eventually show them to be either under- or over-estimates.

Looking to further research on the subject, such work should attempt, first, to minimise the above-mentioned limitations of this study. Second, competition between electronic and print news media in India is in early stages, but the competition is bound to increase. Although data on electronic media may remain hard to obtain, future studies should try to examine its impact on the print media and thereby on newsprint consumption. Third, attempt should also be made to complement the model-based objective forecasts of newsprint consumption with the systematically collected views on the forecasts from both the newspaper and the newsprint manufacturing industries. To maximise return from investment in such research, serious consideration should be given to regularly disseminate the forecasts and industry's comments on them, among all involved in the supply and consumption of newsprint in India.

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